DRAPER CORPORATION
HOPEDALE MASSACHUSETTS

Cotton Chats

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COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF.
AND IN CANADA

DRAPER CORPORATION
HOPEDALE MASS.

No. 260. MAY, 1925.

EBEN DRAPER BANCROFT

EBEN DRAPER BANCROFT

The death on April 6 of Eben Draper Bancroft, vice president and director of the Draper Corporation, closed a notable connection of 61 years with the corporation and its predecessors. Entering the employ of E. D. & G. Draper in 1864, he took charge of the accounts. A little later, as head of the office, he carried on the larger part of the correspondence of Geo. Draper & Sons, selling agents for the several Hopedale industries, up to the time of their consolidation in the Draper Company in 1896, when he became Purchasing Agent.

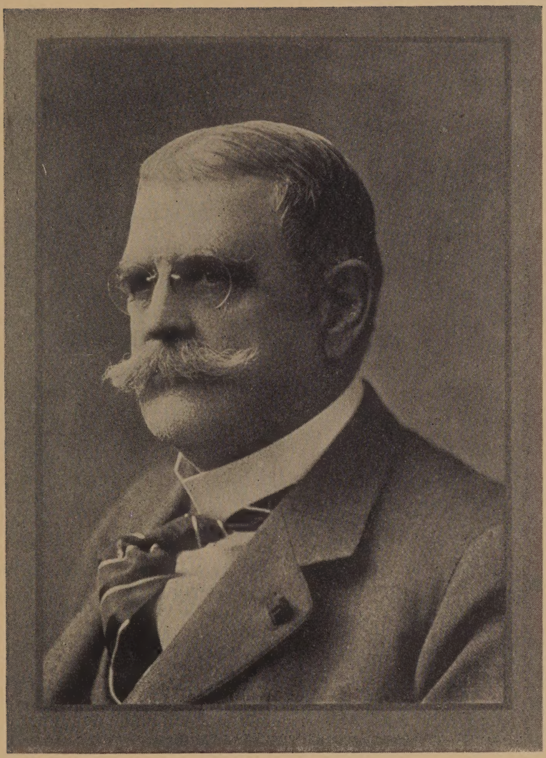
Handling the correspondence of a growing business in the '70's and '80's was quite different from similar work in these days of the typewriter. Mr. Bancroft was an expert penman, and his letters of those days are occasionally recalled by older mill men as almost perfect examples of penmanship.

This correspondence made Mr. Bancroft's name familiar to mill managers of an older generation. With his assumption of the duties of purchasing agent, he was no longer in close touch with those who use our machines, but acquired a large acquaintance with those who produce and sell the raw materials required in our plant. He retired as purchasing agent five years ago, but remained as vice president and director of the corporation.

Throughout his long connection with our business Mr. Bancroft's service was distinguished by exacting faithfulness to every trust and loyalty to his associates.

Mr. Bancroft was a native of Hopedale, the eldest son of Joseph B. Bancroft, one of the pioneers of the Hopedale industries and second president of the Draper Company. He was of early New England ancestry, John and Jane Bancroft having settled in Salem in 1632.

Mr. Bancroft was deeply interested in and responsive to any call to service for his native town. He was Town



EBEN DRAPER BANCROFT

Treasurer from the incorporation of Hopedale in 1886 and Treasurer of the Unitarian parish for 45 years.

Besides his Hopedale interests, he was at times an officer or director of several manufacturing companies, was director of the Massachusetts Trust Co. of Boston from its inception and director of the Milford National Bank.

He was a Mason and served as Commander of Milford Commandery, K. T., in 1886-8.

He was an active worker in the Republican party for many years, though not himself an aspirant for political office.

COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF.
AND IN CANADA

DRAPER CORPORATION
HOPEDALE MASS.

No. 261. JUNE, 1925.

IMPORTED ENGLISH BROADCLOTH SHIRTING

The salesman for a maker of custom shirts called on us the other day. He handles only "the highest quality imported English" shirtings.

After showing his regular card samples, he handed us his prize sample of quality goods—a yard of English broadcloth.

Quality it had in raw material, in preparation and spinning of yarns; but to his surprise we pointed out a mark in the cloth showing every place where the shuttle had been changed in weaving. This mark, peculiar to a filling change by hand on a non-automatic loom, marred the beauty of the broadcloth.

We had at hand and were pleased to show him a piece of American broadcloth made on the Northrop loom. Not a mark of this kind showed.

We suggested that he get a few samples of "made in America" broadcloth woven on Northrop looms with a Feeler to match the pick.

We have examined samples of broadcloth made by different American mills on Northrop looms and have found

them superior in feel, texture and appearance to the English importations and with fewer weaving defects. We congratulate the manufacturers and are glad to bear testimony to the excellence of a home product.

CRAFTSMANSHIP AND POOR TOOLS

In the early days of the automatic loom the new machine was largely regarded as a device for increasing production and reducing labor costs on coarse goods.

That is just what it was. The Northrop loom went through its early stages of development as a print cloth loom. The passing years have seen a great advance.

Today Northrop loom products are outselling common loom products—on quality.

Better cloth can be made on Northrop looms than on any common loom.

Manufacturers have proved it. Some of them did not succeed on their first efforts. Help used to one kind of machine for years cannot change without learning how to use the new tool. Study and experience bring results.

Making fine fabrics calls for constant watchfulness to prevent defects of manufacture. They are a machine product in spite of all the skill and craftsmanship of the weaver. No true craftsman was ever helped by being compelled to use a poor tool.

The perfected Northrop loom relieves the weaver of much of the drudgery of preventing defects of manufacture and gives results not possible where the skill of the weaver is depended upon without the assistance of its automatic aids to the making of good cloth.

What we have said about English and American broadcloth shirtings is true of many high grade cotton fabrics. American automatic machinery and the increasing skill of American craftsmen in taking advantage of its possibilities are together responsible for these new quality products.

A FEELER OR HAND CHANGE OF SHUTTLES

When filling is replenished by a Feeler on Northrop looms there should be no partial picks or thick and thin places. The last pick before the change is a complete pick. The new bobbin is placed in the shuttle between picks, while the shuttle is out of the shed. The first pick laid from the new bobbin is a complete pick. The weave is complete without defect.

These conditions are possible where the change in filling is made by hand. That they are seldom attained is proved by the cloth made on common looms.

Hand control of power machines cannot compete with automatic control in freedom from manufacturing defects.

NEW DROP WIRES THAT ARE QUICK AND SURE IN ACTION

Quick drop.

Do you know anything that would improve your Warp Stop Motion any more than a Drop Wire with a "quick drop?"

If Drop Wires are rusty, if they gather moisture, if for any reason they develop an affinity for each other and one fails to drop quickly when the warp thread breaks, your Warp Stop Motion does not stop the loom promptly and poor cloth may be made.

For more than thirty years we have been at work improving our Stop Motions and Drop Wires.

We have invented ways of finishing Drop Wires so that they were delivered to you in condition to do all they were expected to do.

They were as smooth as mechanical skill could make them.

All burrs were removed by hand polishing of the thread eyes and slots.

They would not saw, scratch and tear your warps.

New wires worked as well as old ones that had been polished by use.

There seemed to be nothing more to be desired in a new Drop Wire as we delivered them to you.

But Drop Wires do not remain new. You must continue to use them after they are old.

Humidity is a weave room requisite.

Steel will gather moisture if there is any in the air. Moisture on steel brings rust.

Even a brand-new, highly polished Drop Wire loaded with moisture becomes sticky. A sticky Drop Wire will not act quickly. If the wires are crowded, it may not act at all.

Rust increases the tendency of the Drop Wire to stick to its neighbor and fail to drop. Rust also stains the warp.

We have been trying to take the stick and the rust out of our Drop Wires. Copper plating was an attempt in that direction. It helped, but did not prove adequate.

Now we have it.

The new Drop Wire we are now prepared to furnish and which we expect will entirely supersede the old wire on new orders is practically rustless.

It has very little tendency to gather moisture from the air.

Because its surface does not rust or gather moisture or lint or anything else that corrodes or roughens it, this Drop Wire does not stick to its neighbors when called upon to perform the duty that is its only reason for existence in your mill—to drop when the warp breaks.

Quick and sure are the proper adjectives to describe these new Drop Wires.

They cost no more than the old ones. They work better. They are good when they are new. They are good when they are old.

They mean better cloth.

COTTON CHATS
TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 293. FEBRUARY, 1929.

ADJUSTABLE AND OILABLE YARN BEAM BEARINGS

We have a new Yarn Beam Bearing that prevents Beam jumping; that can be adjusted to the wearing down of the Beam Gudgeons; that can be oiled; that will enable you to continue to use Beams you are now about to throw out because of worn gudgeons.

The appearance of the cloth is never good with a jumping Yarn Beam. The weave becomes uneven.

Sometimes the jump of the beam is enough to unmesh the Beam Head gear and Let-off Pinion. This puts the automatic let-off out of commission. It may also break the gear teeth.

A jumping Yarn Beam is due to a poor fit between the bearing and the Beam gudgeon.

Bearings wear away; so do gudgeons. In the days of cruder loom-building this was taken as an inevitable and natural happening. For a slowly moving journal, a bearing made well enough to hold oil and prevent wear was too expensive. It was cheaper to replace worn Beams when they became too troublesome.

But the ever-present trouble of the jumping Beam has always prodded us for a solution.

After long experiment and the trying out of many Bearings, the solution appeared to us to require certain fundamentals:

The Bearing must fit the gudgeon close enough to hold a reasonable amount of oil to reduce wear.

There must be a means of adjustment to preserve this close fit—both for the purpose of retaining this oil and to hold the Beam firmly in place.

The Bearing must not cost too much.

These fundamentals have all been attained in the new Bearing.

Adjustment to Wear

A close fit was obtained by finishing the bearing.

An oil-hole offers a means of oiling this finished bearing. This preserves the close fit by reducing wear on both bearing and gudgeon.

To further slow up the wearing down process, this new bearing was fitted to the larger diameter of the gudgeon. This larger section offers a greater surface for wear. This greater surface and large diameter allow the wear to continue longer before the gudgeon becomes too weak to hold the weight of the full beam.

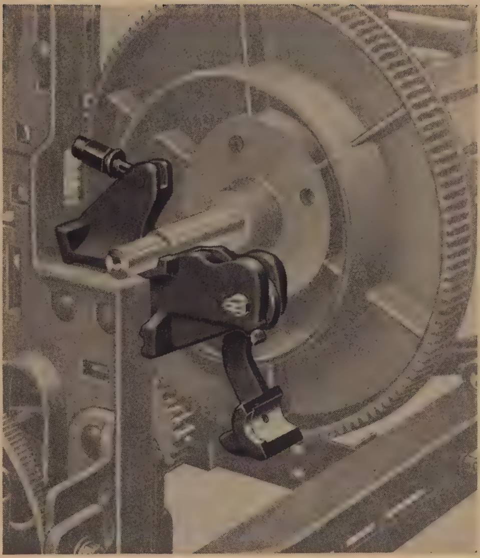
To make it possible to preserve the close fit even after considerable wear, we have hinged the bearing cap upon an eccentric pin by which the cap may be adjusted forward or back in a manner quite similar to the use of the crank pin to adjust a Crank Arm. By means of this adjustment the beam may be firmly held at all times in spite of any wearing away of the gudgeon.

The cap is locked firmly in place by a hinged bolt and lock nut that make it easy to change the beam.

Our pictures show the strength of construction and advantages of our new Yarn Beam Bearings.

The first picture shows the bearing open for the removal of the Beam. In the open cap may be seen the hole for oiling, the wide bearing upon the large part of the gudgeon and the raised edge that fits over the shoulder of the gudgeon to prevent end play.

The eccentric pin for adjustment of the cap to any wearing down of the gudgeon is shown with its slabbed end for making the adjustment.



Bearing Open

The second picture shows a closed bearing with the cap locked firmly in place by means of a hinged bolt and lock nut. The strength of the bearing and firmness with which the Beam is held are apparent.

Bearing Closed

The elimination of all jump to the Yarn Beam, reduction of wear on the gudgeon and a means of adjustment to such wear as does take place, were the chief ends sought in the design of this Bearing.

These are faults that have never been overcome in any previous bearing.

Besides the form of bearing shown here, it is also made to fit old looms with beam sockets cast in the loomside.

These new bearings may be used, without other new parts, to restore to use many discarded beams.

New Bearings Rather Than New Yarn Beams

If the small ends of your Yarn Beam Gudgeons are worn down so that you must either repair them by bushing the gudgeons—a difficult task if the Beams are to run true—or buy new Beams, these new Bearings will allow you to continue to use the old Beams. Because these Bearings hold the Beams by the large part of the gudgeon, the worn small end is no longer a defect.

Beams with worn gudgeons are common on looms with a beam socket in the loomside. Because the loomside must be cast with a moulder's draw in the casting, the socket has a slightly bevelled bearing for the gudgeon and cuts it away rapidly near the shoulder.

A supply of these new bearings will make your worn Yarn Beams again usable. They will also improve your looms by putting an end to jumping Beams.

Our new looms are built with sides to take the new Yarn Beam Bearings.

The bearings are also made for repairs on older looms with beam sockets in the loomsides as well as for the models equipped with separate bearings.

They will improve the appearance of your cloth—for, if kept properly adjusted, there is no chance of a loose or jumping beam.

They prolong the life of Yarn Beams.

They wear longer than any other Yarn Beam Bearing.

They keep Let-off Pinions in better shape because they prevent broken teeth due to beam jumping.

They can be adjusted. They can be oiled.

They are, in fact, everything a Yarn Beam Bearing should be, so far as years of experience have taught us the essentials.

COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 294. APRIL, 1929.

OUR NEW WAREHOUSE AT SPARTANBURG, S. C.

Better and speedier service in shipment of repair parts and replacements on Draper machinery is assured to the textile industry as a whole, and to the mills in the Carolinas especially, when we open our new warehouse now being erected at Spartanburg, S. C.

In the early days of the development of the textile industry in the South our headquarters for that territory was established at Atlanta, Ga., where our warehouse now has nearly 50,000 square feet of floor space exclusively used for the storage of repair parts and replacements for Northrop looms.

The Atlanta warehouse is to be continued, and its facilities and service will be enlarged and improved from time to time as the need develops. But the industry in the South has grown so extensively, we have decided to establish a second Southern warehouse at Spartanburg. It will speed up our service on repairs to the mills of the Piedmont section especially and double our storage capacity and facilities for serving the industry of the entire South.

Building Now Being Erected for Draper Corporation at Spartanburg, S. C.

Northern mills are served directly from our plant in Hopedale, where our large stockroom acts also as the supply base for the two warehouses in the South.

An Ideal Location

The location at Spartanburg is ideal. About two and one half miles from the center of that city, near the Hayne, S. C., railroad station, we have secured a little over 30 acres of land in two parcels on either side of the main line of the Southern railroad. The site is also served by the Piedmont and Northern railway company and is on the main highway from Spartanburg to Greenville by way of Fair Forest.

On one of these lots the Fiske-Carter Construction Company of Greenville and Spartanburg is now building a modern warehouse designed by J. E. Sirrene & Company of Greenville. The new building will be 260 feet long by 100 feet wide and two stories high. It will be of the modern type of mill construction throughout, with steel frame and monitor roof its entire length. The foundation is of concrete and the walls of red brick with Indiana limestone trimmings.

The building is to have offices and fully equipped storage bins and racks for repair parts and replacements on all Draper machines.

For speedy handling of both incoming and outgoing freight there will be sidetracks connected with the two railroads that serve the plant; and loading platforms for trucks to accommodate over-the-road shipping wherever this is preferred or found more economical, and for the express company shipments.

Following a long-standing Draper policy to provide good light for working conditions, special attention has been given to this feature of the new building. Actinic glass has been used throughout for the proper protection of both our workers and materials in storage, especially beneficial where parts are made of wood.

Fire protection is afforded by a complete sprinkler and hydrant system fed by a 100,000 gallon tank on a steel tower. The water comes from the city water system of Spartanburg.

The contractors expect to complete the erection of the building by July. The work of equipping and stocking the plant will then proceed as rapidly as possible. We hope the opening date for complete service will be not later than October 1.

Homes for the Help

We are to proceed at once with the construction of four dwelling houses and garages for those who are to have charge of the plant.

We are also planning a small village for the colored employes of the warehouse. This will be located at a point easily accessible.

Contracts for these have not been given out yet, but it is planned to have all in readiness when the new warehouse goes into service in the fall.

With the Spartanburg warehouse open and equipped, as we have now planned, with every convenience for the speedy handling of orders for repair parts, we shall be able to give the users of Draper machines even better service than in the past. Three supply depots can give better service than two.

Spartanburg will fill orders from the Carolinas more quickly than is now possible.

Atlanta, with a smaller field, can do better than ever before.

The two plants, with more than double the storage capacity of the present depot at Atlanta, will aid each other in emergencies in a way to improve greatly on our present service to Southern mills.

COTTON CHATS

TRADE-MARK REG U.S PAT OFF
AND IN CANADA

DRAPER
CORPORATION
HOPEDALE MASS.

No. 299. OCTOBER, 1929.

FREDERICK EVERARD FORSTER

Mr. Frederick Everard Forster of Atlanta, Georgia, died on Tuesday, September 3rd, 1929.

Mr. Forster had been long associated with the business of Draper Corporation and its predecessor, Draper Company, assuming the position of Southern Salesman and during the past twelve years he had been the Southern Representative and a member of the Board of Directors of Draper Corporation.

He was a man of unusual ability and his devotion to his friends and associates was marked. His enthusiastic, constant and intelligent work added in no small degree to the success of all his undertakings.

He held the highest regard and esteem of his associates, who by his death have suffered an irreparable loss and experienced a lasting sorrow.

At a meeting of the Directors of Draper Corporation held September 23, 1929, the Committee appointed at the last meeting submitted the above testimonial, which was unanimously adopted, and it was voted that the testimonial be inscribed on the records of the Corporation and a copy sent to Mrs. Forster.

Frederick Everard Forster

FREDERICK EVERARD FORSTER

Frederick Everard Forster was a native of the city of New York. He was born October 26, 1874, the son of Henry Waldo and Constance (Atherton) Forster. His father was a prominent lawyer of the metropolis, and his mother came from one of the old families of New England.

Until he was 12 years of age he attended the public schools of New York. The family then moved to Boston, where his schooling continued until his graduation from the Massachusetts Institute of Technology with the class of 1896.

The next two years were spent in some of the mills of New Bedford to acquire a practical knowledge of the machinery and methods of the textile industry.

In 1898 he went South to join the Draper Company's Southern selling corps then being organized at Atlanta by the late J. D. Cloudman.

Energetic, courteous and happy in personal contacts, he won the friendship and confidence of the leaders of the expanding textile industry in the South and proved an able lieutenant to Mr. Cloudman. On the latter's death in 1917 Mr. Forster became Southern Representative and a Director of the Draper Corporation.

Mr. Forster was married August 25, 1906, to Miss Ethel Fisher, daughter of the late Henry E. Fisher, who held important positions in the textile industry of the South for many years and more recently in New England until his death last year.

Mr. Forster passed away September 3 at the Georgia Baptist Hospital in Atlanta after an illness of only a few days. He is survived by his widow and a brother, Henry A. Forster of New York.

COTTON CHATS

TRADE-MARK REG U.S PAT OFF AND IN CANADA

DRAPER CORPORATION
HOPEDALE MASS.

No. 302. MAY, 1930.

FRANK JEROME DUTCHER

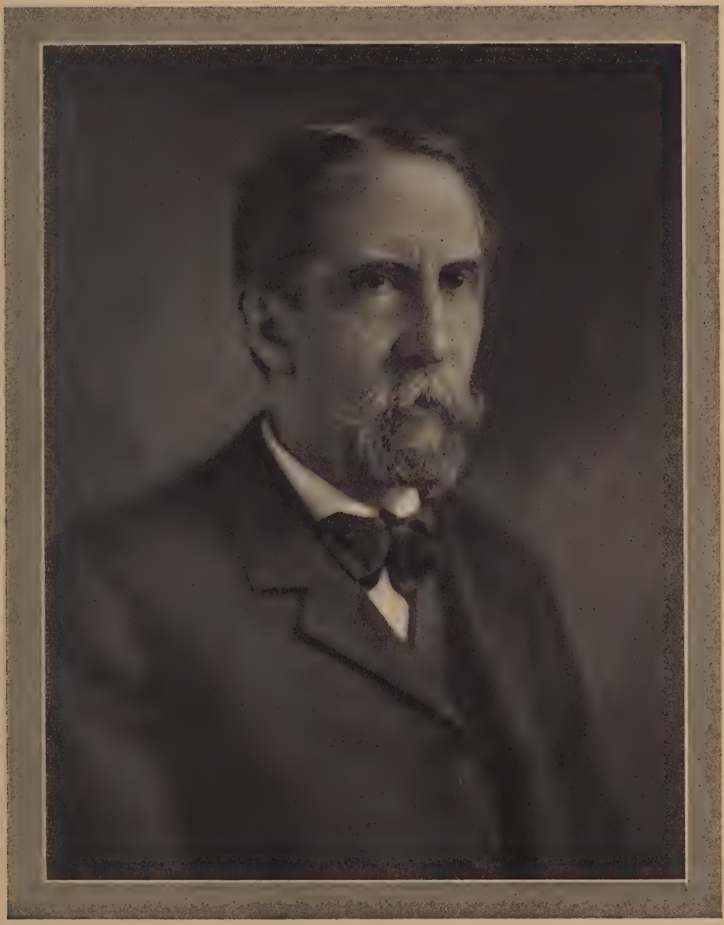
Mr. Frank J. Dutcher, former President of Draper Corporation, died in Hopedale on Sunday, April 13, 1930.

During the time of Mr. Dutcher's entire business activity extending over a period of more than sixty years he was associated with the business carried on by Draper Corporation and its predecessors, having held various official positions with the company, including that of President and a member of the Board of Directors of Draper Corporation, of which Board he was the Chairman.

For many years Mr. Dutcher was closely associated with the department of patents and inventions relating to the textile industry, to which he personally contributed, and during which time the textile industry as a whole made its most marked advance as compared with any other period during the entire history of the art of weaving textiles.

He was a man of unusual ability, and especially devoted to his friends, associates and the advancement of all the interests in the Town of Hopedale and the business with which his life was so closely interwoven. He held the highest regard and esteem of his associates, who by his death have suffered an irreparable loss and experienced a lasting sorrow.

At a meeting of the Directors of Draper Corporation held April 28, 1930, the committee appointed at the last meeting submitted the above testimonial, which was unanimously adopted, and it was voted that the testimonial be inscribed on the records of the Corporation and a copy sent to Mrs. Dutcher.



FRANK JEROME DUTCHER

FRANK JEROME DUTCHER

For just over half a century Frank J. Dutcher was an active executive officer of the Draper Corporation and its predecessor companies.

After a ten year apprenticeship under his father, Warren W. Dutcher, inventor of the Dutcher reciprocating loom Temple, he became, at the age of 29 in 1879, Treasurer and executive head of the Dutcher Temple Company.

Seventeen years later, when the several Hopedale industries united to form the Draper Company, he became Assistant Agent to the late Governor Draper and for the next thirteen years was generally known to the industry through Selling department correspondence.

In 1909 he was elected the third President of the Draper Company and in 1916 first President of the Draper Corporation. Last June he became Chairman of the Board of Directors.

As President, Mr. Dutcher's special activities covered direction of advertising and editorship of Cotton Chats from 1909 to 1922 and supervision of our department of patents from 1909 to the time of his death.

Although he was born in North Bennington, Vt., he spent his entire life from the age of six in Hopedale. His love and devotion to his home town and neighbors was marked by lifelong interest and devoted official service to its schools and park system, in both of which he took a kindly and benevolent pride, and zealous and unselfish service to the Memorial Unitarian church.

Mr. Dutcher was a lifelong Republican, a member of the Home Market Club and has served on state and local Republican committees. He was an officer and director in several corporations and the Home National Bank of Milford.

COTTON CHATS

TRADE-MARK REG U.S PAT OFF
AND IN CANADA

DRAPER CORPORATION
HOPEDALE MASS.

No. 304. AUGUST, 1930.

A CENTRIFUGAL CLUTCH THAT WILL WEAR AS LONG AS ANY SOLID WHORL

The Stimpson Centrifugal Clutch Spindle will function as long without wear or need of repairs as any solid whorl spindle.

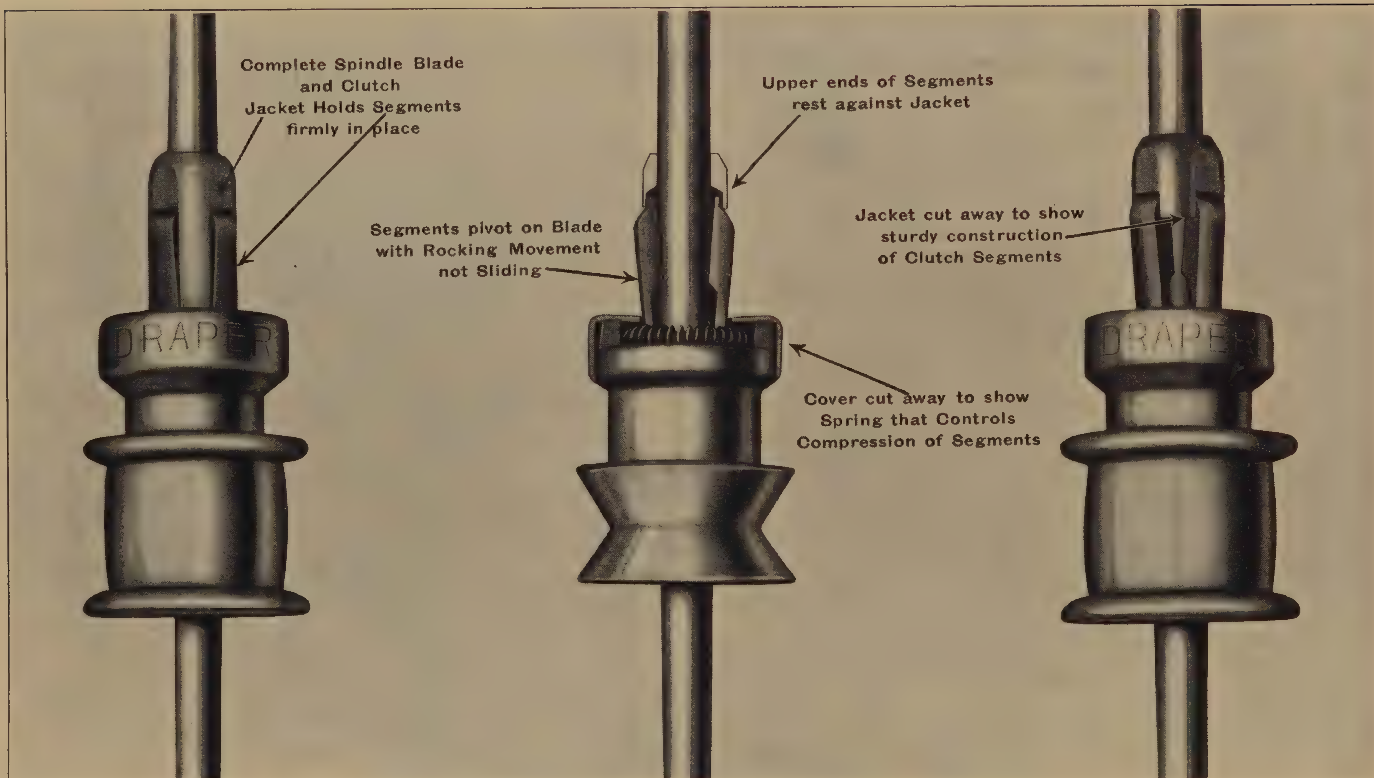
The Stimpson Clutch will outwear the blade of the Spindle.

The proof is found in the lasting qualities of a clutch used continuously for 125 years.

Of course it was not a mill test. We cannot wait that long to prove a new device.

Our research department has a way to get, in a short time, the practical equivalent of years of actual use.

To prove the Stimpson Clutch they rigged up a laboratory test to get the doffing wear of the clutch after years of mill service. There was continuous doffing by hand, as in the mill, with regular examinations for wear, need of repairs or



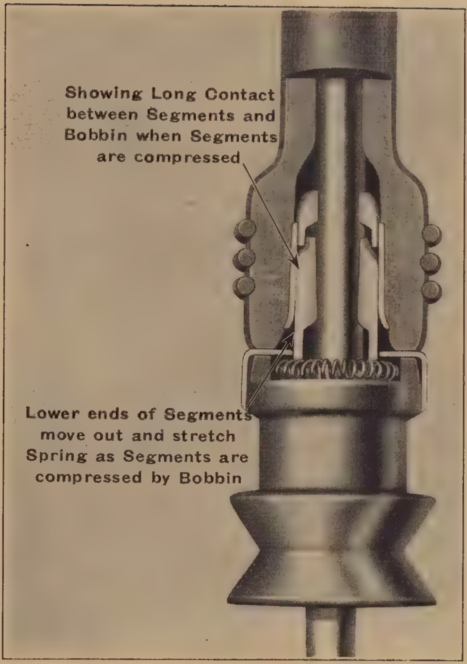
The New Stimpson Centrifugal Clutch Spindle

other signs of failure to function properly.

Before starting the test, an estimate was made of the average number of doffings per spindle per year when spinning 36's yarn.

A careful count of the doffings was kept, and the test was to stop when the clutch showed signs of wear or need of repair.

When the number of doffings equalled the fixed equivalent of 125 years of operation a careful examination disclosed neither signs of wear nor any other structural weakness of the clutch.



Stimpson Clutch and Bobbin Sectional View

In this test the blade did not undergo the wear it would get from its billions of revolutions in 125 years of service. No blade would last that long.

The clutch did undergo all the wear it would receive in such operation.

The conclusion is clear. The Stimpson Centrifugal Clutch will outlast the blade.

No solid whorl could do more.

This is what you have wanted to know about some Centrifugal Clutch Spindle—that it would last without repairs and prove as hardy as the solid whorl spindle.

The old-style solid whorl spindle is out-of-date.

It never insured even yarn packages on the bobbins; nor as much yarn as the bobbins would hold; nor the

building on the bobbin of a bunch of yarn of the proper length, properly made and correctly placed.

With your modern looms with the Midget Feeler your filling bobbins must have a bunch of the proper length, properly made and correctly placed.

Without it you make too much poor cloth and have excessive filling waste.

We brought out the original Centrifugal Clutch to meet the demands for properly spun filling bobbins.

It served its purpose.

Its weakness was its need of frequent repairs.

In the Stimpson Clutch the design has been changed to overcome entirely this need of repairs.

The new clutch is also more efficient in action.

The segments that drive the bobbin press upon the blade. Clutch and blade are always concentric, doing away with vibration of the spindle due to eccentricity.

When the top of the segments are pushed in by the bobbin, the lower ends move out, giving a longer bearing of the segments on the bobbin.

A tension spring holds the segments in position and controls the pressure upon the bobbin. It is securely fastened, is made of special wire and will not break.

There is no wear upon the blade by the segments because the action is rolling rather than sliding.

The jacket over the segments is specially designed to make the removal of waste easy.

The jacket and segments are so fitted together that waste and other foreign substances cannot get inside to disturb the action of the clutch.

The Stimpson Clutch Spindle will replace all types of the solid whorl without change of bobbins. The hole in the bobbin butt must be straight, not tapered.

Old blades will often take the Stimpson Clutch.

All spindles for either old or new frames should have the Stimpson Clutch.

COTTON CHATS
TRADE-MARK REG U.S PAT OFF AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 307. APRIL, 1931.

BETTER LOOM PARTS
BETTER REPAIR SERVICE

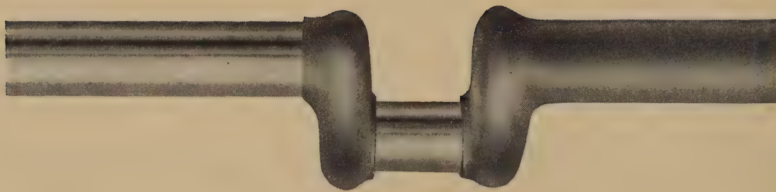
The big end of the cost of loom repairs is in the Weave Room—not in the cost of parts used. That cost is due to the stopping of the looms while repairs are being made. You don't like to have your looms stopped.

You may be Treasurer or Agent with an eye to low costs and possible profits. You may be Superintendent or Overseer of Weaving with your job depending upon the percentage of cloth you can get. You may be only the Weaver looking for a full pay envelope at the week-end. Be you one or the other, you want your looms to run.

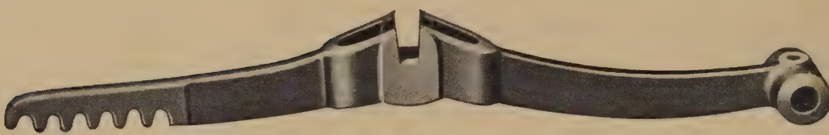
So do we.

After you, we are more interested than anyone else in keeping your Northrop looms running.

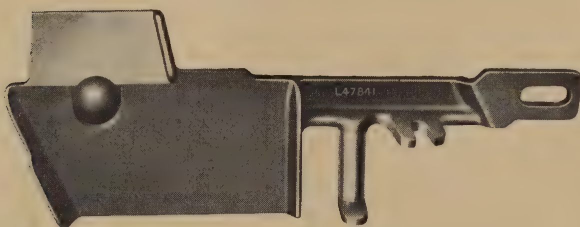
We are building better looms all the time. We have been at it ever since the first Northrop loom appeared. Improved devices on these better looms make the looms run better; improved castings reduce breakage and loom stops. Recently we have gone to great expense to give better and quicker service on repair orders.



A New and Better Crank Shaft



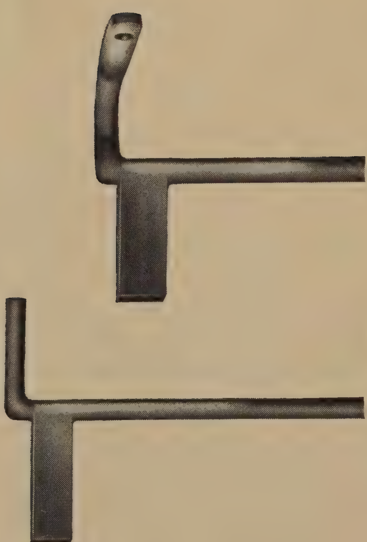
Treadle with Deep Notches



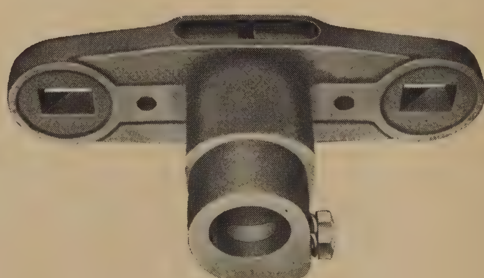
Picker Stick Guide That Will Not Get Loose

New T.C. Spring

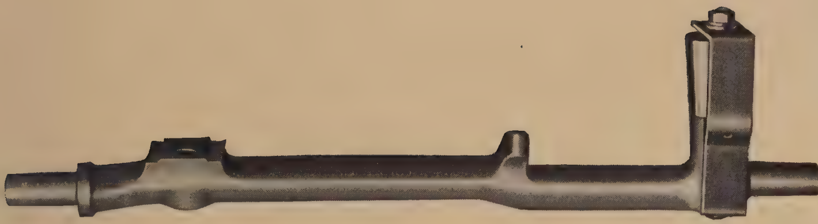
Sword with
2 Set Screws



New Dagger Rods That
Will Not Chip



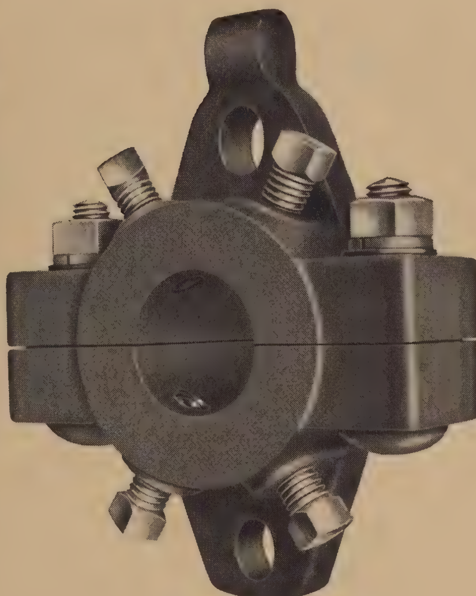
Rocker Shaft Box
with Replaceable Bushing



New Pick Shaft with Steel Pick Ball Cover

Pick Cam Hub Collar

Stronger Pick Ball Cover



New Split Pick Cam Hub with Clamping Fit and 4 Set Screws

New One Hand Pick Arm

Improved Link Lever

Driving Rod Arm with Button Lock

New Midget Feeler Blade

Filling Motion Finger

In the supply room at your mill you keep a limited stock of loom parts likely to break.

Once this stock had to be a large one and ran into a burdensome inventory. Today a small stock is enough. With our new Spartanburg warehouse and larger stocks at Atlanta and Hopedale, we ship nearly all repair orders the day they are received.

You want parts that fit; parts that will wear.

Draper parts fit because they are made to standard measurements we alone can have; are tested to gauges no one else has; are inspected for possible defects no one else can know about.

Parts that do not fit lengthen the loom stops for repairs; cause extra breakage of other parts; increase the work of fixers by getting other parts out of place; reduce your loom production; injure the quality of your goods; and deprive you of the full advantage of Draper service. We cannot help you out when your loom troubles are caused by the use of mongrel repair parts.

Draper parts are built to wear well.

We are constantly developing new processes and new metal mixtures and making use of any such developments in other lines of machine building. Our castings, both on new looms and on repairs for old looms, are made of mixtures of metal selected for the particular work the part has to do. These castings have greater tensile strength than those they replace. They last longer.

Better Draper parts—better because they will wear longer, because they will improve the operation of your looms—are appearing all the time. They are immediately available on repairs.

We have kept users of Northrop looms well informed on new loom mechanisms. We have not printed much about improved individual parts. In this issue we show a few recent "better parts."

COTTON CHATS
TRADE-MARK REG U.S PAT OFF AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 308. JUNE, 1931.

MORE CLOTH PER LOOM NEXT FORWARD STEP TO LOWER TEXTILE COSTS

More looms per weaver. This has been the keynote of progress to lower weaving costs for a quarter century and over.

Something more is now necessary. It will be found in More cloth per loom.

Every year since the first Northrop loom appeared we have built a better loom. Every year the looms we put out have run better, more smoothly than those that preceded them.

One improved device after another has reduced the manual labor of the weaver, made the fixer's job easier.

As the loom improved and weaving defects from loom failure decreased, weavers have been able to run more and more looms. It became possible to shift the work of filling bobbin batteries to unskilled help.

Goal after goal was attained on the road to better looms and more looms per weaver—16, 32, 54, 72, 100.

We have kept the Northrop loom the standard. More Northrop looms have been tended by a single weaver than ever has been possible with any other loom.

And every advance has meant millions in savings to textile mills with Northrop looms; an easier and better job and ultimately better pay for the weavers.

Reaching the Limit

But there appears to be a practical limit to the number of looms per weaver.

That limit appears to be in the vicinity of 100.

The limit is due, not to the work the weaver has to do; but rather to the ground she has to cover and the necessity of bringing her without too much delay to the loom that is stopped.

With better Northrop looms and better yarns that mills find it profitable to spin, it is often possible today to figure from the number of ends that break that many more than 100 looms can be handled by each weaver; but the ground she must cover and her average distance from the loom that stops make this impracticable.

We foresaw this situation some years ago and asked ourselves these leading questions:

Is progress to stop? Can it be that there is to be no further advance in the art of weaving—no further gain in reducing costs?

Solving the Problem

With opportunity closed to more looms per weaver, why not more product per loom? More product called for higher speed. Why not higher speed?

Better looms had opened the way to more looms per weaver. Could not better looms open the way to greater

speed and more cloth per loom? The question challenged a solution. We sought the answer.

First of all we found that the better looms we were building could be run faster than the generally accepted speed, which was based on looms as built years before.

But they could not be speeded up enough.

We wanted a really substantial increase in product.

We went after the requisites of an efficient high speed loom.

We found we needed a stauncher frame and more room inside to provide for changes desired with higher speed—greater distance from Take-up roll to Lay, wider cloth on a given size of loom, larger rolls of cloth, larger yarn beams and certain improvements in mechanisms.

We needed new and more powerful brakes to stop the loom within a fraction of an inch. Internal expanding brakes of the automobile type were the answer.

We needed an easier bang-off and better Frogs to prevent broken Swords.

We needed a better Pick Motion, steadier and more even—one that would stand the great strains of higher speed, one that could be repaired or replaced with less fixing in case a break did occur.

We provided for anti-friction bearings and Alemite greasing, if desired, and improved our oiling system.

We built a new friction drive without end thrust.

We added bearings on both sides for Take-up gears.

A new Rocker Shaft was designed to prevent gradual dropping of the Lay.

These and other essentials of the new High Speed loom were laid down in June, 1928. The X Model loom had been born.

Two and a half years of most intensive tests and gradual improvement of this loom followed in our own

plant, with two mill installations operated at the same time for practical observation of results under ordinary mill conditions.

Meanwhile, in our shop, a long series of break-down tests at excessive speed with thousands of bang-offs proved the loom's ability to stand up at high speeds.

Satisfied at last that we had a loom to insure a new step forward in lower cost weaving, the X Model loom was placed on exhibition at Greenville last fall.

Since then we have sold several thousand of them. In a few months they will be producing and competing.

Where the Gain Comes In

We believe these new looms can be run at the start with only a slight reduction in the number of looms per weaver. Ultimately there will be no reduction. The improvements make this possible.

Adaptation of the possibilities of the loom to your yarns and weaves by your mill organization will take a little time. It always has with every new loom.

When this is done, the net gain will be a handsome return on the capital cost of replacement.

Higher speed means more cloth per loom—more cloth per weaver—less cost per yard.

Figure it out for yourself. It is a simple sum in arithmetic. You don't need a cost man to do it.

Having reached the practical limit of "more looms per weaver," progress lies along the road of "more cloth per loom."

Ten years ago a High Speed loom was impracticable. Today it is necessary. It has been made practical. It is here—here as a money-maker, as a rejuvenator of the textile industry for those who make use of it.

COTTON CHATS
TRADE-MARK REG U.S PAT OFF AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 309. OCTOBER, 1931.

OLD VALUES GONE---NEW VALUES FOR NEW START

The price of Cotton is at the low point for many years. It may go lower. It cannot go much lower.

Stocks of manufactured goods are small. Buying by the hand-to-mouth method put them there.

Women's styles have changed. Their gowns take more yards of cloth.

There are fewer people buying automobiles, radios or anything else on the installment plan.

When luxury buying falls off, there is more money for the necessities, among which are many products of the textile mill.

The world-wide depression is at or near its climax. So the financial and business leaders tell us.

Business faith and optimism are at the low point. They always are at such a time.

Yet we have weathered every previous depression and moved ahead to greater business heights than before.

If you have faith in America, you must feel that we are going to weather this storm; that better times are not

far away, with a period of prosperity even greater, perhaps, than we have ever seen.

It is a time for faith and courage—in yourself, in your business.

How is your faith? Are you courageously planning for what is to come?

In common with the other large builders of textile machinery we feel we can talk about faith in the textile industry and courage for the future.

We feel that we have proved ours.

During the past two years we have spent money most liberally in speeding up the development of new machines for the industry. We have revamped our shops, adopted improved methods and installed costly machinery to put us in a position to build these better textile machines.

As we face a new business cycle, the textile mill can command the most efficient mechanical equipment it has ever known—better than that in any other country.

In every department of the mill it is wondrously more efficient, more economical, than machinery in use before the depression began.

In the new era ahead machinery five or ten years old —and in some cases even two years old—will prove a handicap.

What Are You Doing About It?

You are busy with consolidations; with new selling plans; revamping your finances.

What thought are you giving to the advantages you can secure from these more efficient machines?

A ten, a fifteen, a twenty per cent increase in the production of your machines at the same labor cost is an advantage not to be lightly overlooked or disregarded in these days of strenuous competition.

A Loom Worth Thinking About

Have you seen our new X Model High Speed Loom?

It is being run successfully at 190 and 200 picks per minute. Some say they can run it faster. We know they can on many weaves. It was built to run faster. We wanted a safe leeway and plenty of reserve power.

Figure your production at 190 or 200 picks. What is your percentage of increase?

It is a better loom than any of its predecessors. It has power, speed, strength; runs more smoothly, more steadily; requires less fixing; stops more quickly and accurately; is more easily oiled and cleaned; requires less frequent oiling; makes better goods, less seconds; weaves a larger roll of cloth from larger Yarn Beams.

And, after a little experience, your help can run these looms at practically the same number per weaver, more per fixer. The work of oiling, cleaning, putting in warps and removing cloth is reduced.

Your Spinning

The high efficiency of the best loom ever built may be reduced by anything less than the best of spinning.

You cannot be sure of even yarn packages on your bobbins, nor of as much yarn on each bobbin as it will hold, without a Centrifugal Clutch spindle.

To insure a minimum waste with the Midget Feeler, you must have on your bobbins a bunch of yarn of proper length, properly made and correctly placed. You can get this only with the Centrifugal Clutch spindle.

The Stimpson Patent Clutch for our latest spindles wears as long and continues to run as true as any solid whorl. This insures the advantages of the Centrifugal Clutch at the maintenance cost of the old style spindle.

It cost us a lot of money to perfect the wonderful finish on our new spinning ring. You can start up these rings with a traveler of the same weight used on your old rings—sometimes with a heavier one.

How's Your Warping?

High speed warping is no longer an experiment. It is the basis on which costs will be figured hereafter.

The Draper High Speed Warper will run at any speed your yarn and any modern magazine creel will allow. It is staunchly built, runs with less vibration, is built lower than other Warpers. It runs and it stops with the power, smoothness and precision of a modern automobile. Patented features contribute to its efficiency.

It will give you better warps, on fewer machines, with less help, less floor space and great saving in cost.

For Weavers of Silk and Rayon

For the Silk manufacturer we have three models of Silk looms. They have devices that are new for weaving silks and many improvements in older mechanisms. They are designed for lower costs and better product.

For Rayon weaves we have continued our adaptation by practical experiment of several of our loom models. We have important improvements in bobbins and shuttles for Rayon. There is an improved Draper weaving layout for the great majority of Rayon weaves.

The world is busy just now scrapping values of all kinds for a new start. Much Pre-Depression machinery has only Pre-Depression value.

Are you planning to stand pat or to go ahead with every obtainable advantage?

COTTON CHATS

TRADE-MARK REG U.S PAT OFF
AND IN CANADA

DRAPER CORPORATION
HOPEDALE MASS.

No. 310. JANUARY, 1932.

102 LOOMS PER WEAVER
102 LOOMS PER FIXER
192 PICKS PER MINUTE

It is very pleasant to find out that you are right.

There is a blessed and satisfying sense of joy when you have dreamed and planned, experimented and labored to a certain end, to see dreams and plans come true.

During the past year we have sold and shipped 2500 of our new X Model high speed looms.

These looms have gone to 22 different mills. The majority of these mills have only trial sets. Others have received enough looms to afford real mill tests of what the loom will do.

We have told you the story of why and how we built the X Model loom; what we expected it to do.

In brief, we had discovered that the limit in the number of looms a weaver can tend is about 100.

Was progress to stop—not through failure in loom improvement, but from an inability to find a practical arrangement of the growing sets of looms per weaver?

If a weaver could not run much over 100 looms, why not increase the product of the 100 looms she can run?

Such was the problem we faced and accepted—and it was not an easy problem.

It meant higher speed, with an increase in product of 20 or 25 per cent, a better product if possible, and no loss in the number of looms per weaver.

Now the looms are running. Here are the reasons for our pleasant sense of things accomplished.

We wanted Speed.

On the larger installations the looms are running at 190 and 192 picks as smoothly as any looms you ever saw. There is no sign that this speed is excessive or likely to develop any weakness in the loom.

Some who are experimenting on smaller sets say they can run the looms at considerably over 200 picks—and are doing it.

There is little loss in percentage of production; no increase in seconds. Speed and the consequent larger production mean more cloth per loom.

The increase is very near the ratio of the X model speed to the speed of your present looms.

We wanted better cloth.

It is reported from the New York market that print cloths woven on X model looms have set a new standard. They are said to be about the best ever offered there.

At all mills the X model product is as good as or better than similar weaves on older models.

We wanted no reduction in the number of looms per weaver.

Weavers are already running from 50 to 102 looms each as easily as similar numbers of looms have been run on slower models. This is done on initial installations without previous experience on high speed looms.

On our older models the number of looms per weaver has been stepped up gradually. The X models start up so well weavers can run full sets from the beginning.

Fixers take care of as many as 102 looms each.

All the evidence from looms started so far points to no reduction in number of looms for any of the help.

Thus have results justified our hopes. They have far exceeded our anticipations of the probabilities of initial performance.

No Room at the Bottom

These are dismal times in practically every line of business.

We have started a new year. We have taken account of stock. Let us take account of stock for the country as a whole, for business in general.

Stocks of raw materials held by manufacturers are small—probably the smallest we have ever known. They are at rock bottom unless all business is to stop.

There is no large stock of manufactured goods. The shelves of retailers are as near bare as they ever can be unless business is to stop.

The public has been buying only bare necessities. The dammed-up demand for goods is enormous. If let loose, mills and trade would be taxed to capacity.

We are scratching bottom, with mighty little room left in that direction. Yet money and capital, though shy, are abundant and waiting only for opportunity.

From the bottom there is only one way for business to go—and that is up.

Will the upturn start in the near future?

We are not prophets. We do not know **WHEN** the change is coming. But it **IS** coming. May we, then, with the usual compliments of the season, propose

A TOAST—TO 1932

Here's to Nineteen Thirty Two,
A better year for me and you!
We've suffered long;
We've struggled hard;
We took our knocks.
Though battle-scarred,
We're game and full of pep to fight
To set the Textile business right.

Here's to Nineteen Thirty Two,
A braver start for me and you!
We've suffered long;
But why turn back
To view the wrecks
Along the track
That we have walked through years of gloom.
Oblivion should be their tomb.

Here's to Nineteen Thirty Two
With forward look for me and you!
You have your courage;
So have we.
No pessimist
Can ever see
The rising sun of better days.
He always sits in mournful haze.

So let us make of Thirty Two
A gladsome year for me and you!
The past is gone.
Let's look ahead;
Let's plan and work
Until the "red"
Shall leave our books—and Thirty Three
Will greet us all most happily.

COTTON CHATS
TRADE-MARK REG U.S PAT OFF AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 311. MARCH, 1932.

WEAVE ROOM POINTERS FROM A WELL-RUN MILL

How the other fellow does it is always of interest to the man who is trying to do his best with his own job.

It is of more interest if the other fellow is doing a particularly good job.

One of our men reported a mill where things seem to go a bit better than in the average mill. Asked for the secret of his success, the manager said:

"We have no secrets. We are constantly watching little things; we study the job for better ways of doing things. That is what we believe superintendents and overseers are paid to do.

"Why not send one of your good men down to look us over? He is welcome to anything he can pick up and he may be able to make suggestions that will help us."

We accepted the offer and found several things in our man's report that are worth passing along.

Particularly would we call attention to the very effective use they make of some advantages obtained with the No. 17 Sliding Bar Warp Stop Motion.

What Our Man Saw

Spent the greater part of the day around the weave room with the superintendent and overseer trying to find the reason for the efficiency of this mill as compared with many others on the same class of work.

I believe it rests on the constant supervision of both of these gentlemen and their policy of co-operation in running the mill rather than any particular settings of loom mechanisms.

Adjusting the Brakes

The new E Model looms stop and start much better than in the average weave room. We know brakes have to be adjusted occasionally, but in this mill when brakes need a little adjustment they get it, which is not the case in many weave rooms.

Here is their way of keeping a check on the brakes. At stopping time, noon and night, the weavers stop the looms rather than let them slam as the speed goes down. They don't run down the front alley knocking off shipper handles. They pass through the back alley and stop the looms by the fingers of the #17 Warp Stop Motion. In this way all looms are stopped with the Lay in starting position. To start up they pass through the front alley and pull on the shippers. If a Lay has stopped too far forward, the weaver flags the loom for the fixer.

It is noticeable that the mill help are carefully instructed to take every advantage of the many special features of the No. 17 stop motion. This is especially true of the device for opening the warp at a broken end.

They keep the motion set so that this opening is sure to be well defined. If they find it necessary to use the

stop motion fingers to open the warp, they have the setting fixed at once. This reduces to the minimum the time and labor of tying in the broken end.

Work in Back Alley

Weavers spend most of their time in the back alley except when tying in an end. If it is necessary to stop the loom to attend to a yarn defect, they do it by the stop motion fingers. After fixing the yarn trouble they reach over from behind the loom and pull on the shipper.

For a girl to pull on the shipper by reaching over from behind, the shipper must be kept fairly easy. This is done by having very little tension on shipper handle spring. Set with no tension on spring with shipper in idle position, so that when it is in operative position there is only sufficient tension on spring to keep the shipper handle in place.

Driving Friction Set Close

Looms are belt driven with friction pulleys. To facilitate quick starting belts are kept tight and are cleaned weekly by the fixer with a dry rag or waste held in each hand against the running belt. Once a month the cleaning is done by special help with the rags or waste dampened with a little dressing, after which the outside of the belt is given more dressing with a mop.

They also set the friction a little closer than is usual in most mills. By holding the Lay with one hand and pulling on the shipper with the other, the Lay will break away when the front edge of the shipper is in line with the shipper lock catch, so that after the loom has sufficient friction to carry it, the shipper still has an inch to go before being locked in the shipper lock.

One other condition helps in starting these looms from almost any position back of front center. The pick is set a bit early, just enough to know that the crank shaft is front of top center.

Weekly Inspection of Shuttles

Another rule of this weave room contributes to its efficiency. Fixers, with 204 looms per section, (they put in no warps) are required to go around the section once a week, take out each shuttle and examine it to see if the spring is tight, the bobbin straight and to look for any bruises or slivers on the shuttle. This weekly inspection avoids many breakouts and gives a chance to check shuttle troubles before they become serious.

The looms have been speeded up and are now running much faster than is usual with E models.

There is another rule here which I believe is good when properly carried out. The position of the hole in pickers is set by the management instead of allowing as many positions as there are loomfixers. When a supply of new pickers is received, a boy bores the holes to the shape, depth and position that have been set.

The secret of good management!

Our man went looking for it in this well-run mill.

He comes back with a report of this, that and the other done a little better than it is usually done.

We have quoted some of these things. Perhaps they will be worth something to you as tips.

They do not make a code for running a weave room.

To us they are rather confirmation of our belief that "studying the job" is the first step on the road to success for the mill official who wants to do something better than "holding his job."

COTTON CHATS

TRADE-MARK REG U.S PAT OFF
AND IN CANADA

DRAPER CORPORATION
HOPEDALE MASS.

No. 312. MAY, 1932.

Do the Textile Mills Need The Textile Machinery Shops?

The textile industry is suffering from hard times. Mills are oppressed by handicaps on every hand.

To save is the order of the day in every branch of mill expenditure. Pressure to save often crowds out the usual consideration of whether the money is well spent.

The vender of cheap, imitation supplies is always ready to take advantage of such a situation.

The textile mills have a long list of casualties. The shops that have kept the industry supplied with the latest and best machinery are even worse off as a whole than the mills.

The textile machinery shops are auxiliaries of the industry. They are children of the mills, are supported by them—for the mills are their only customers.

They have tried to be of real service. They have maintained their corps of trained men, specialists with years of experience, always at the call of the mills.

Do the mills realize what the break-up of these shop organizations would mean to the industry?

There are some reasons why the industry needs the textile machinery shops more than ever before.

Without the shops that produce improved machinery the textile mills of the United States would soon add to their present troubles a degree of foreign competition they have not known since the last period of low tariffs that preceded the appearance of the automatic loom and the better machines of all kinds that followed.

The rest of the world is taking a new interest in improved machinery—especially in the textile field.

The movement has been aided in England and western Europe by the higher wages that have made installation of better machines more profitable; and by the lessening of labor's opposition.

With the more general call for improved machines, European brains and creative ability are turning more and more to their production.

In the far East the Japanese are showing signs of becoming creative in textile machinery.

In Russia one of the selected fields for machine building is textiles.

Until now American textile machinery has been far ahead of that of the rest of the world.

What of the future?

One Kind of Self-Interest

The shops have always worked early and late for the prosperity of the textile industry.

They have maintained extensive experimental and research departments that they might continuously bring

out later and better machines—to keep the industry as far as mechanical means and equipment goes on a par with any industry in the world.

Self-interest? Yes.

They have made the mill's problems their problems and spent money and time liberally in their solution.

Self-interest? Yes.

They have contributed heavily in money and effort to the support of associations, exhibitions and co-operative enterprises of all kinds for the promotion and welfare of the industry.

Self-interest? Yes.

But it is an intelligent self-interest—the kind that leads the wise husbandman to sow that he may reap.

It is the kind of self-interest that gives business its power and drive; that makes business a mighty force in the world, contributing more permanent benefits than philanthropy and charity.

Another Kind of Self-Interest

There is another kind of self-interest.

It leads men to seek to reap where others have sown and labored through the heat of the day to nurture their crops.

This self-interest blazes no trails, maintains no research, conducts no experiments, carries on no service department, assumes no responsibilities.

Its slogan is competition and low prices. It lives by imitation, by copying.

The present business depression is forcing us to scrap some of the Victorian traditions handed down to us by the gay nineties.

The Sherman Law once tried to make permanent the tradition that "competition is the life of trade."

The troubles of our wheat and cotton farmers, the efforts of European industrial combinations to grab our foreign markets, and dumping of raw materials by Soviet Russia have opened our eyes to the pressing need of a new idea—co-operation within our own industries.

The textile industry has been trying to solve its problems by co-operation—one for all and all for one.

That co-operation should include the shops that build the industry's machinery.

There is only limited business in these days for the textile machinery shops. Yet the shops that remain in the field have not cut down on service. Their men are still available for any call from the mills. This service is being maintained at a loss.

Meanwhile the shops are losing some of the little business available—losing it to those who furnish substitute parts at a price they are able to quote only because they take advantage, without cost to them, of service and of patterns maintained by the shops.

The textile machinery shops have always recognized their duty to the industry—their self-interest in its welfare.

What would the industry do without the service the shops have given to keep the textile industry of America one lap ahead of the rest of the world?

Without co-operation, that service is in danger.

The highest type of self-interest is that which sees its own interest in co-operation with its fellows.

This is the sort of self-interest the textile industry needs now in every branch.

COTTON CHATS
TRADE-MARK REG U.S PAT OFF AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 313. AUGUST, 1932.

YOU CAN'T RUN A LOOM WITHOUT A SHUTTLE

You can now buy Shuttles with the Cast Iron Eye at new low prices—the same price we charge for Shuttles with brass eyes.

The Cast Iron Eye is a good Shuttle Eye.

It is the quickest and surest to thread-up.

It is the least likely to misthread or unthread.

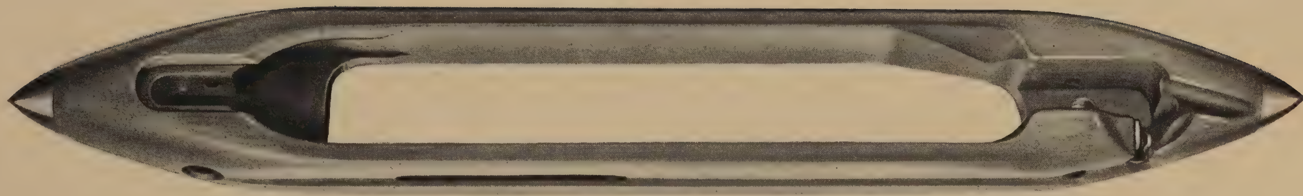
It has a thread channel that will not wear.

It has a hard metal shell that will not jam, that the yarn cannot cut, that will outlast the wooden frame of several Shuttles.

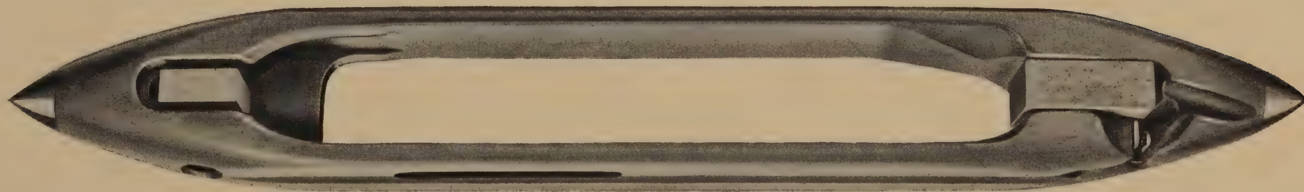
The invention of the replaceable steel scroll gave the Cast Iron Eye its sure thread-up, its lasting thread channel; made possible the hard, enduring shell.

Previously brass had been the preferred metal for Eyes. It could be easily worked to finish the thread channel. But brass Eyes may be jammed by the trapping of the Shuttle. A jammed Eye means bad weaving.

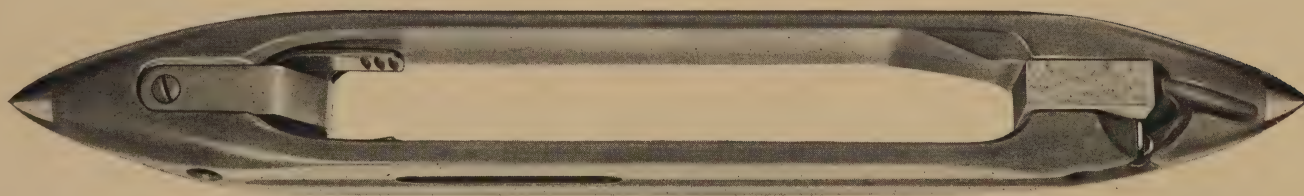
With the scroll as a thread channel, we made the shell of the Eye of a non-jammable metal that withstands all



Shuttle Blank with Accurate Cuts for Both Spring and Eye



Shuttle Blank with Blocks in Place to Preserve Accuracy of Slots



Complete Shuttle without Eye, with Block in Eye Slot

ordinary wear and tear of weaving. The steel scroll can be easily and inexpensively replaced if damaged.

Using Eyes Over Again

Because the Cast Iron Eye will outlast the frame of the Shuttle and retains its shape so that it will fit a new blank, we have decided to offer at new low prices Shuttles minus the Eye and screw that holds it in place.

The Eye slots are accurately cut by our special machines to the exact size of the Cast Iron Eye.

Before offering this service, we overcame the one objection to shipping Shuttles with fittings left out.

Wood, no matter how well selected and prepared, is subject to change. As soon as a slot is cut in a block, the Eye should be inserted to insure a perfect fit.

In place of the Eye we insert, as soon as the slot is cut and finished, a wooden plug made with the utmost care to the exact size of the Eye. This plug should be kept in the slot until replaced by the Eye.

For mills with an accumulation of Shuttle Springs we offer Shuttles without Eyes or Springs. The accuracy of both slots is preserved by the wooden plugs.

This is not as desirable as to buy with only the Eyes left out.

Eyes can be easily replaced; but Shuttle Springs, no matter how accurately the cut is made and preserved, need the services of an expert fitter. If they do not position the bobbin properly, weaving losses are serious.

So we recommend the purchase of Shuttles with only the Eyes left out and the holding of any extra springs for repairs. But for those who still want to fit their own Shuttle Springs we offer these blanks without either Eyes or Springs.

What Have You Saved?

Only the best Shuttles you can possibly get can be economically used.

Suppose you are using 1000 Shuttles a year and can buy Shuttles not quite so good at 10 or 20 or 50 cents each less than you would pay for good ones.

Your possible "saving" can be only a hundred, two hundred or five hundred dollars a year.

Against this you must figure the results of poor weaving, for poor Shuttles mean poor weaving.

Shuttles with out-of-date Eyes are poor Shuttles.

Shuttles with Eyes jammed out of shape are poor Shuttles.

Made-over Shuttles with Eyes defective from use are poor Shuttles.

Shuttles with Springs that do not hold the Bobbin in proper position are poor Shuttles.

Poor Shuttles do not thread up as well.

Poor Shuttles cause more filling breaks.

Misthreads and filling breaks mean poorer cloth, more seconds.

They mean less cloth per loom.

They mean less looms per weaver; less per battery hand.

Can you afford to save 10 or 20 or 50 cents on a poor Shuttle and increase your weaving costs by dollars where you have saved only cents?

You can't run a loom without a Shuttle.

You can't weave a yard of cloth without a Shuttle.

A poor Shuttle reduces the product of your loom.

A poor Shuttle reduces the quality of your cloth.

Can you afford to buy and use a poor Shuttle—or any Shuttle but the best?

COTTON CHATS
TRADE-MARK REG U.S PAT OFF AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 313. AUGUST, 1932.

YOU CAN'T RUN A LOOM WITHOUT A SHUTTLE

You can now buy Shuttles with the Cast Iron Eye at new low prices—the same price we charge for Shuttles with brass eyes.

The Cast Iron Eye is a good Shuttle Eye.

It is the quickest and surest to thread-up.

It is the least likely to misthread or unthread.

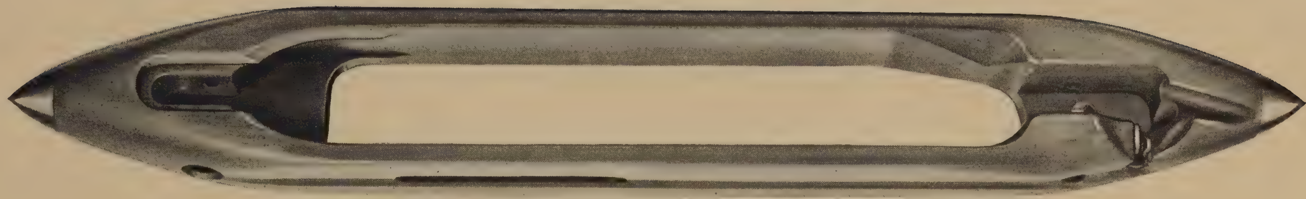
It has a thread channel that will not wear.

It has a hard metal shell that will not jam, that the yarn cannot cut, that will outlast the wooden frame of several Shuttles.

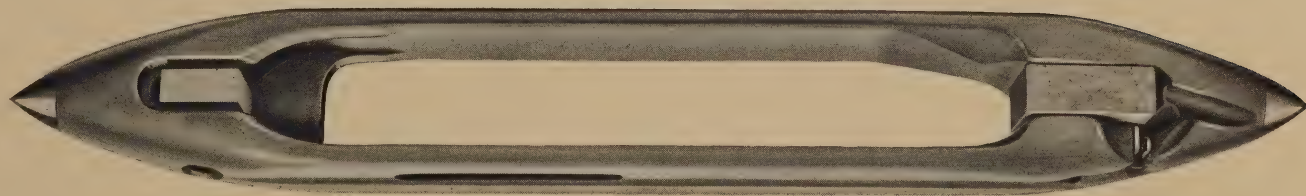
The invention of the replaceable steel scroll gave the Cast Iron Eye its sure thread-up, its lasting thread channel; made possible the hard, enduring shell.

Previously brass had been the preferred metal for Eyes. It could be easily worked to finish the thread channel. But brass Eyes may be jammed by the trapping of the Shuttle. A jammed Eye means bad weaving.

With the scroll as a thread channel, we made the shell of the Eye of a non-jammable metal that withstands all



Shuttle Blank with Accurate Cuts for Both Spring and Eye



Shuttle Blank with Blocks in Place to Preserve Accuracy of Slots

Complete Shuttle without Eye, with Block in Eye Slot

ordinary wear and tear of weaving. The steel scroll can be easily and inexpensively replaced if damaged.

Using Eyes Over Again

Because the Cast Iron Eye will outlast the frame of the Shuttle and retains its shape so that it will fit a new blank, we have decided to offer at new low prices Shuttles minus the Eye and screw that holds it in place.

The Eye slots are accurately cut by our special machines to the exact size of the Cast Iron Eye.

Before offering this service, we overcame the one objection to shipping Shuttles with fittings left out.

Wood, no matter how well selected and prepared, is subject to change. As soon as a slot is cut in a block, the Eye should be inserted to insure a perfect fit.

In place of the Eye we insert, as soon as the slot is cut and finished, a wooden plug made with the utmost care to the exact size of the Eye. This plug should be kept in the slot until replaced by the Eye.

For mills with an accumulation of Shuttle Springs we offer Shuttles without Eyes or Springs. The accuracy of both slots is preserved by the wooden plugs.

This is not as desirable as to buy with only the Eyes left out.

Eyes can be easily replaced; but Shuttle Springs, no matter how accurately the cut is made and preserved, need the services of an expert fitter. If they do not position the bobbin properly, weaving losses are serious.

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COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA

DRAPER CORPORATION HOPEDALE MASS

NUMBER 314 OCTOBER 1932

OUR EXHIBIT AT THE GREENVILLE TEXTILE SHOW

The Southern Textile Show opens at Greenville, S. C., on the 17th of this month.

The two years since the last show have been trying times for manufacturers of cloth, and especially bad for builders of machinery for the cloth mills.

The Draper Corporation has operated on a part time schedule through these years.

Only faith in the future of the textile industry and courage to invest in that future have enabled us to give our workers as much employment as we have— no small part of which has been in developing better machinery for the good times that now appear to be on their way back.

The results of that courage will be in evidence at Greenville, some of them being:

A High Speed loom so well built it can be handled as easily as the slower looms you now have—giving you the increased product at high speed as clear gain.

A new Duck loom weaving 60″ No. 6 Duck and running so smoothly at 132 picks it will be hard to realize it is weaving duck.

Our new C Model Rayon loom which in percentage of production and freedom from troubles common in weaving rayon has won enthusiastic commendation from the mills where it has heen operated on trial.

A Draper-made Stafford loom.

Some new Shuttles.

New Spinning Rings.

An improved Morrill Slasher Comb.

A collection of improved loom parts for repairs on your present Northrop looms.

The Stimpson Patent Centrifugal Clutch Spindle, which, though not a product of the past two years, is the latest and best in Spindles.

And there will be other Looms and Loom Temples and Bunch Builders and loom fittings and supplies that will look quite familiar, but all of which have been refined or improved in some particular that you will be glad to know about.

X Model a Proved Success

The outstanding feature of the show of two years ago was the first showing of our X Model High Speed Loom.

In the two years that have passed, the X Model has been tried out in a large way by several mills and in a more limited way by others who could not afford a large installation in these times of depression.

The loom is a proved success.

It runs at the high speed for which it was designed.

It runs at this speed smoothly.

Its powerful brakes stop it with a minimum strain.

It is easily handled.

It requires fewer repairs than any previous loom.

Weavers handle practically as many looms as they can of the slower models.

Loomfixers can care for as many or more.

At an increase of 20 per cent in speed there is 20 per cent more cloth at practically the same labor cost.

It is as up-to-date as your new car, a money-maker from the start, inevitably the loom you must have.

Three Shipper Handles

After two years of mill operation, few changes have been found necessary in this loom.

But we have made some additions.

Weavers are gradually adopting the plan of working in the back alley. Our Sliding Bar warp stop motion has helped this change because a weaver could stop the loom by the stop motion indicators.

But it was a long reach for some of them to start the loom from the Shipper Handle.

The X Model loom you will see at Greenville will have three Shipper Handles—two on the front of the loom and one in the rear.

This gives two means of stopping the loom and one of starting it without leaving the beam alley.

To prevent starting the loom when a fixer is busy in the other alley, there is a shipper-locking device.

This loom will also be equipped with our new No. 29 Battery which has a depressible swinging Bobbin Support designed to prevent the bobbin from turning.

It will run at 192 picks on 2 shade work with four harnesses and staggered cams, with our new Sheave type of Roll and Shaft top with rolls on the side of the loom, which is easier on the warp and brings harnesses closer together.

More New Looms

Two brand new looms will make their initial bow at Greenville.

Our new C Model loom for rayon and fine cottons is a shuttle-changing loom that operates like our Northrop filling changer—without stopping the loom, without the loss of a pick.

As a shuttle-changer, it gives a first pick tension—most essential in the weaving of rayon.

The loom is built with a Yielding Reed and without Daggers, making possible a soft, easy pick that largely eliminates sloughing-off.

The Take-up is our new No. 65 Semi-low Roll Rayon take-up with 6″ take-up roll covered with rubber and an easily removable cloth roll.

It has a No. 5 Improved Roper let-off with double impulse and hand warp release.

It will run at the show on 2 shade rayon, 150 denier both ways, with bobbin filling.

The new R Model loom for medium heavy duck must be seen to be appreciated. No description of details can do it justice.

This Cotton Chats is our personal invitation to you to visit us at the show and make yourself at home in our booth. A hearty welcome awaits you.

We want to show you how we have employed our time, our money and our help, at a time when machinery was not being bought, to advance your interests, and ours too, we hope.

We are proud of what we have to show. We know you will be interested.

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA

DRAPER CORPORATION HOPEDALE MASS

NUMBER 317 APRIL 1933

YOU NEED GOOD SPINNING FOR LOW COST WEAVING

The number of looms your weaver can run depends on the number of times per day your looms stop.

A few years ago the number of stops per loom from warp breaks on print cloth was from two to three or four per hour.

They are now only one in from two to three hours—that is, from three to four per loom per day.

In spite of every improvement we have made in the loom, this would not have been possible without better warp yarns.

The quality of your filling yarn also affects your weaving costs.

Better Feelers and the modern demand for fabrics woven with Feelers have made this more evident.

Filling that breaks too often reduces the number of non-feeler looms your battery hands can tend; increases the work of your weavers on looms with Feelers.

Filling bobbins with less than a full yarn package increase the work of your battery hands on all looms.

Yarns that are weak, yarns with slubs or too many knots, small or ill-shaped yarn packages, bobbins with the Feeler bunch not properly placed, all increase the cost of weaving.

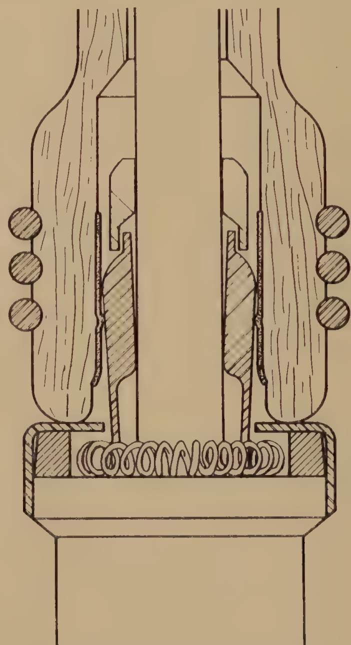
Good yarns decrease that cost.

Good yarns can come only from good spinning—and the first essential of good spinning is good tools.

With this in mind, the production of good tools for good spinning for low cost weaving has claimed much of our time and effort and money during the past few years.

Some of the results have appeared. Some are just now appearing. Perhaps there are some yet to come.

The value of some of the new tools is cumulative in effect.



Stimpson Patent Bushing

Enlarged view showing Two Point Contact between Bushing and each Leaf of Clutch; and why Rising Bobbin must first Close Clutch.

For Instance

The Stimpson patent brass bushing for Draper-made bobbins now consolidates the advantages of the Stimpson patent clutch spindle.

A projecting ring on the inner surface of this new bushing gives double points of contact on each leaf of the clutch to hold the bobbin steady and necessitates a forcible closing of the clutch before a bobbin can rise.

All the forces that tend to make the bobbin rise are not enough to cause this closing of the clutch.

So the bobbin cannot rise and wobble.

The bobbin turns at the same speed as the spindle.

The bobbin is held central on the spindle.

Yarn packages are even—with properly placed bunch.

The Stimpson clutch—the first centrifugal spindle to wear as long as a solid whorl—was designed to give these advantages.

The new Stimpson-bushed bobbin makes them as sure as anything mechanical can be made.

This means better warp yarn, better filling yarn, fewer loom stops, even yarn packages, the right Feeler bunch on your bobbins, less work for your weaver, less work for your battery hand, less defects in your cloth—in short, lower cost weaving.

Our New Spinning Rings

We also have a new spinning ring.

It is made of high grade steel, the grain is right and the finish wonderful.

It looks classy, like a thorough-bred. It sells on sight.

New Draper Ring

But the proof is in the running.

You can start up a frame of these rings with a traveler of the same weight used on your old rings—and sometimes with a heavier one.

And they run as well as they start.

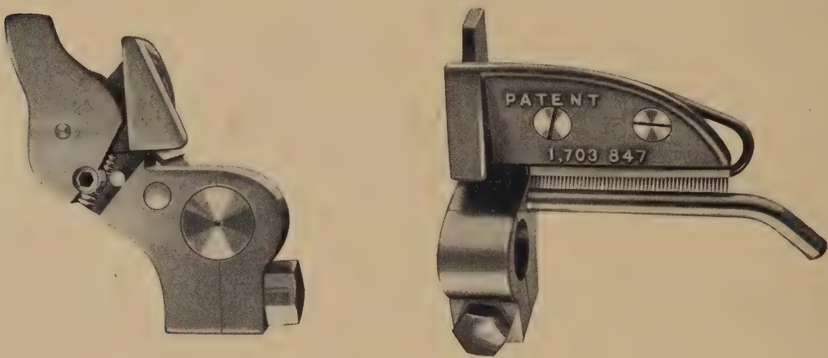
Figure out what this means on your traveler bill, in starting up cost, in better spinning, in better yarn.

A Better Slub Catcher

The MacColl Spooler Guide has been in a class by itself as a yarn cleaner and remover of slubs and waste.

Our picture shows the improvement just made in the method of setting the comb.

The comb is now attached to the holder in a fixed position. The size of the opening for the yarn is varied



MacColl Slub Catcher

The End view (on left), with section cut away, shows new Adjusting Screw for setting the Comb, and Set Screw for locking Adjustment when made.

by an adjusting screw that lifts or lowers the comb by swinging the holder on its hinge.

The adjustment is more easily and quickly made than by the old method, and is more accurate.

A set screw locks the adjusting screw so that the adjustment cannot change.

The Shuttle and Shuttle Eye play a large part in increasing or decreasing filling breaks, especially when Feelers are used.

The Cast Iron Eye is now more generally used than any other because it materially reduces misthreads and filling stops, in some cases as much as 50 per cent.

COTTON CHATS

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 324 AUGUST 1935

When the Yarn Wiggles Out of the Shuttle Eye

If you are a weaver, you have had your troubles—and "cussed" a little, perhaps—when the filling had a way of wiggling out from under the point of the Eye of your Shuttles.

It mussed up your weaving, and admit it or not, it mussed up your temper.

That is why you are going to be interested in this story of the Stimpson Twin Groove Shuttle and its Twin Thread Track.

No new Shuttle device in recent years has had such beneficial effect on weaving. Its Twin Thread Track is the climax of three inventions that have enabled this new Shuttle to effect an eagerly sought reduction in all sorts of filling failures that cause loom stops.

You think of warp troubles as the major cause of loom stops. Of late, better looms and greater care by mills in

preparing better warps to take full advantage of their better looms have reduced warp troubles until records now show that filling failures quite often are the predominant cause of stops on looms with a Feeler.

Feeler looms constitute the majority of operating looms today and produce the fabrics whose costs must be safeguarded. On non-Feeler looms, filling failures may not cause loom stops, but they do increase the chances of making poor cloth and multiply the number of full and partly woven-off bobbins that are ejected.

Filling faults, therefore, of one kind and another became a problem—for the mills and for us.

So far as these faults are due to weak filling or damaged bobbins, they are mill problems—to be solved by care in preparing the filling and better supervision of the selection and handling of bobbins.

The Stimpson Twin Groove Shuttle

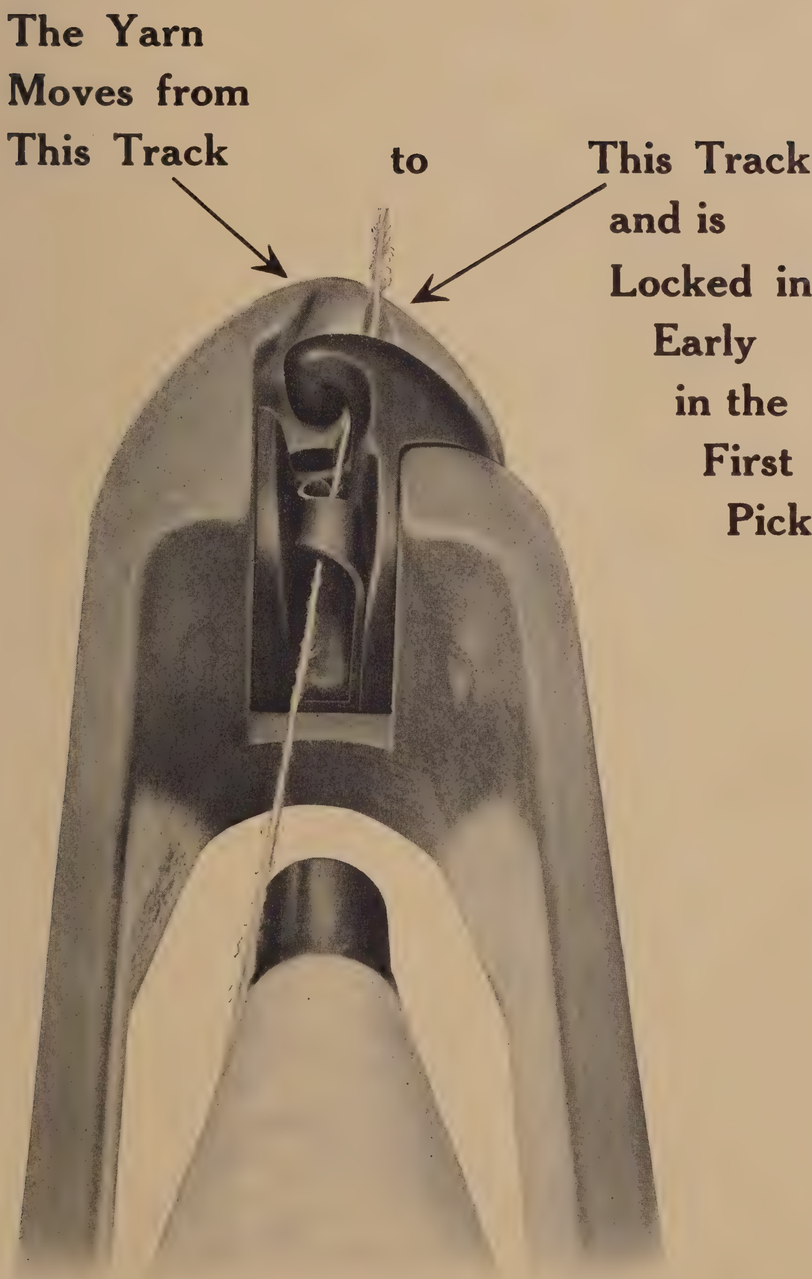
So far as they could be traced to the Shuttle, we accepted the problem as ours. The Stimpson Twin Groove Shuttle is our solution. It has three vitally important improvements:

First. To remedy troubles from an Eye jammed in a trapped Shuttle or from cuts worn in brass Eyes by the yarn, we developed the Cast Iron Eye.

The hard, enduring shell of this Eye will not jam and is not cut by the yarn. Its steel scroll provides a thread channel that will not wear. It can be easily and quickly replaced in case of an unusual accident.

Second. A Shuttle Spring, so fastened that it does not work loose, eliminates troubles from a bobbin held insecurely or so as to point out of line with the Eye.

Third. A new Shuttle block with a double thread groove to prevent mispicks.


The Yarn Moves from This Track
to
This Track and is Locked in Early in the First Pick

The Patent Twin Thread Track

Self-threading Shuttles ever have been subject to a degree of failure of the yarn to enter the side eye.

With the yarn held for many picks by the eye-point only, unthreading, looping and broken filling result.

To end these troubles by speeding up the complete threading of the Eye, we made a new Shuttle block with a double thread groove from the Eye to the point of the Shuttle, the second groove lower than the first.

On the first pick after a bobbin-change, the yarn is drawn under the new wide eye-point and stepped down from the first to the second groove. Starting the next pick it is easily and surely forced into the side eye.

At each step of this threading-up, the yarn is so firmly held that all wiggling out and looping—and the mispicks and other troubles they cause—cease to happen; and the proper operation of the Fork is insured on the troublesome first pick.

If the yarn jumps the side eye later, it holds in the second groove to return to the side eye on the next pick from the left, with no injury to the weave.

The picture on page 3 will help you to understand this story of the Twin Thread Track.

Reduces Filling Stops

The Stimpson Twin Groove Shuttle is a new tool to reduce loom stops from filling faults.

It will not prevent stops due to weak filling, to the use of bad bobbins or to poor yarn packages.

It will largely eliminate first pick Fork failure.

It greatly reduces loom stops due to all kinds of misthreads, to a jammed or cut Eye or a loose Spring.

Loom stops limit the capacity of your weavers and the production of your looms.

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 330 JUNE 1938

Larger Yarn Beams Save 35 to 100% on Investment

Would you invest a few thousand dollars where you could see an annual return on your investment of from 35 to 100 per cent?

You have seen the textile margin of profit worn to a near vanishing point between present day rising costs of production and the low prices your product brings in the thin markets of today.

You would like to widen that margin of profit.

Some mills are doing it through a small investment in loom parts that will enable them to run longer warps.

Larger beam heads and longer warps are the trend in the industry today.

Where they have been installed they are paying a handsome yearly return on a small investment.

They offer the chance to widen your mill's margin of profit.

More Yarn On Beams

The saving comes from the larger quantity of yarn on the beam, in the cost of tying in a smaller number of warps, the cost of putting fewer beams in the loom, the reduced waste at both slasher and loom, and an increase in loom hours due to less time out for changing warps.

The increase in yarn on the beam through a change from a smaller to a larger beam head is as follows:

Changing	15″	to	20″	Beam	gives	92.6 %	More	Yarn
"	16″	"	20″	"	"	65.45%	"	"
"	16 5/8″	"	20″	"	"	51.42%	"	"
"	18″	"	20″	"	"	26.39%	"	"
"	18″	"	22″	"	"	55.56%	"	"
"	18″	"	24″	"	"	87.5 %	"	"
"	20″	"	22″	"	"	23.07%	"	"
"	20″	"	24″	"	"	48.35%	"	"

These figures are based on use of a 6″ barrel.

Where 6″ barrels replace 5″ the increase in yarn is somewhat less and the cost more because of new barrels.

The Easy Change from 18″ to 20″

Where mills do not have to relocate the looms, and the number of warp hands and auxiliary help is enough to allow for a proportional reduction when less beams are required for the amount of warp handled, the saving on drawing-in, on warp handlers and on waste totals about 100 per cent per year on the investment.

And this takes no account of the gain in loom hours and reduction of seconds due to starting fewer beams.

On a change made recently from 18″ to 20″ beams on 500 looms at a cost of $4000 the annual saving was equal to the investment. The gain in loom hours was good for more than 27,000 yards of cloth extra.

On similar changes at other mills the results were about the same.

These are the easier changes to make and naturally the more profitable.

Where Looms Are Relocated

If looms must be relocated, the cost may reduce the annual return from around 100 per cent to from 35 to 50 per cent — still a rather profitable transaction.

On a recent change from 15″ to 20″ beams on 1128 E and K Models, the looms had to be relocated at a cost of $5640 and new 6″ beam barrels replaced the 5″.

The total cost of the change was $25,214.74.

The direct saving on drawing-in and warp handlers for more than 5000 less beams per year was $15,422.00.

The mill did not give us the figures on saving on waste or the gain in loom hours. These would add to the savings on labor.

On a change from 16″ to 22″ beams on 1500 looms — mostly L Models — it was necessary to relocate the looms, shafting and electrical connections.

The cost was $64,500 and the annual saving $20,719.

The saving on waste allowed was below what it will work out, and no increase in loom hours was figured.

Figure It Out for Your Mill

What can your mill save by using larger beams?

A Draper man will tell you.

His estimate will be based on figures you supply on what you are now doing. It will not be guess work.

For a rough idea of possible savings before asking for a complete estimate, follow these simple rules:

From our table on page 2 find per cent of increase in yarn per beam for the change you have in mind.

For example, from an 18″ to 20″ beam gives 26.39% more yarn per beam. Take 25% for easy figuring.

With 25% more yarn on the beam you would use only four beams where you now use five.

You know how many beams you handle in a year. You would save the expense of handling one-fifth of these.

You know what it costs to draw in a beam.

Figure the saving.

You use warp changers, smash hands, room girls and helpers in starting a new beam.

Figure the saving on one-fifth less beams.

You know, or can find out the waste per beam in the slasher room, in starting the beam in the loom, in yarn left on the beam.

The cost of the yarn on the beam less the price as waste is your loss per beam for waste.

Figure the saving on one-fifth less beams.

You know how long your looms stop for putting in a warp and how much cloth a loom could weave in that time.

Multiply by the number of beams saved and you have the yardage you get from your extra loom hours.

Add up the savings.

Get from us the cost of loom parts for the change.

Now do a little figuring on the handsome income you are going to get on the investment.

More Yarn per Beam on New Looms

X Family looms are built to take 22″ and even 24″ beams. They take larger rolls of cloth and larger yarn diameter on the bobbin.

Larger yarn packages are one of the advantages of these looms.

The savings they allow may be added when figuring the profits of installing these new type looms to the increased production of high speed looms and the better cloth they weave.

And these savings are greater than the savings you get from larger beams on old looms.

Naturally many mills prefer the direct course to more yarn per beam by buying new looms of the X Family.

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NUMBER 331 MAY 1939

The X Family Has Grown Up XD Model is the New Member

The X Family of looms has grown up.

The fourth member of this high speed family made its debut at the recent Greenville show.

This new member was the X D Model. It is sturdily built for broad rayons and the heavier weaves of cotton, from broad fancies to medium duck. It is the high speed loom that replaces the Modified D of our older models.

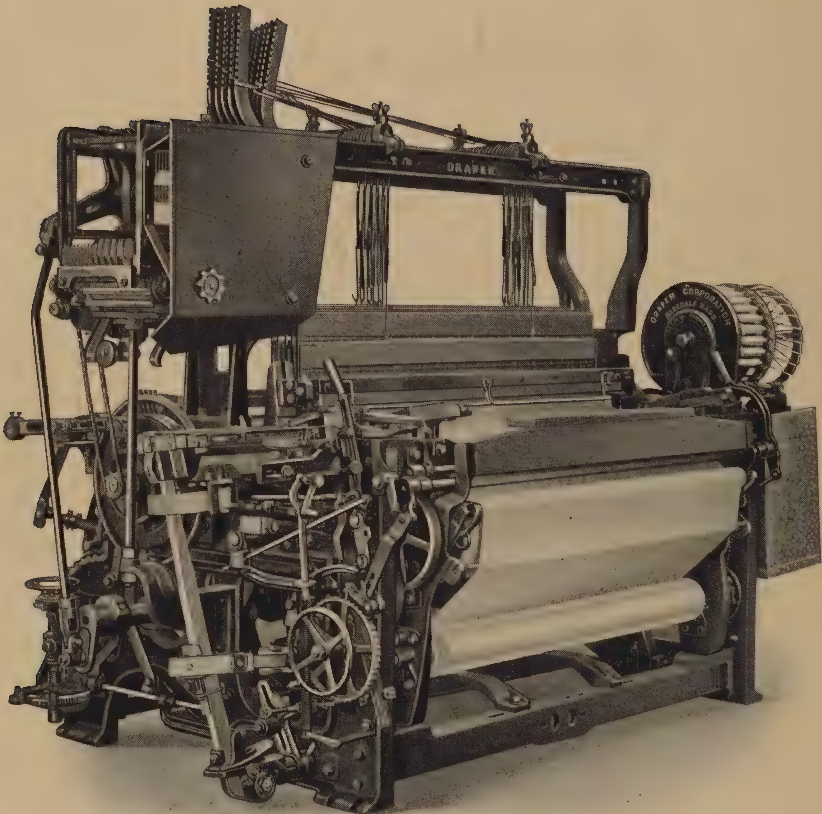
It has broadened the field of the X Family.

There is now an X Family high speed loom for nearly every fabric, cotton or rayon, woven with one shuttle.

Almost 50,000 of the first three models have been sold to northern and southern mills.

This is a mere 10 per cent of the looms that will ultimately be replaced by members of the X Family.

But these 50,000 looms are justifying every claim we have made for them.



NEW X D MODEL FOR HEAVY AND WIDE RAYONS
Weighing 550 Pounds More Than the X K Model a 44″ Loom
Runs at 174 Picks per Minute on Rayons

They have proved that the industry needed the high speed loom.

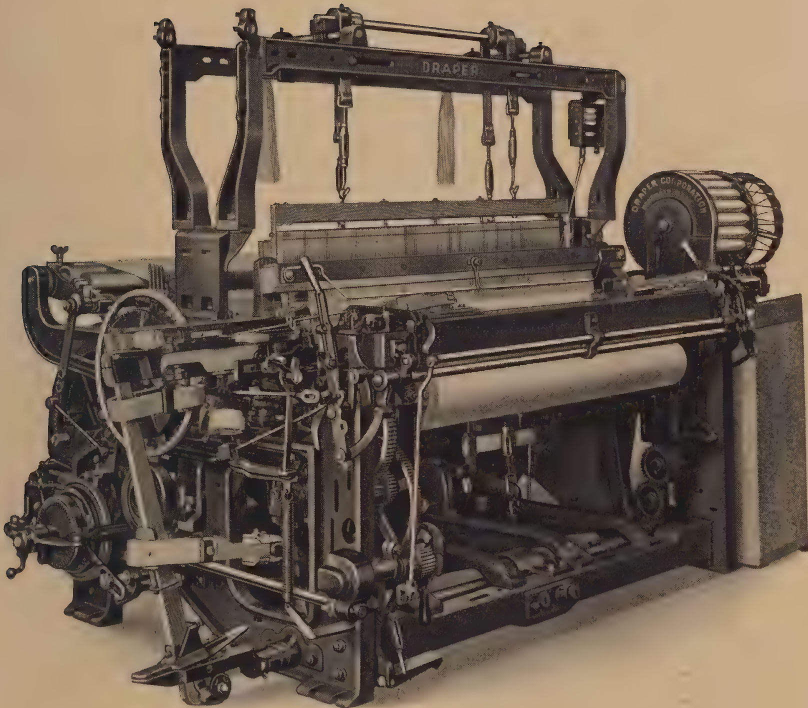
They are weaving more cloth per loom and per hour.

They are weaving better rayons and better cottons—both fancy and plain—at a lower cost.

They set the standards in quality and cost—giving the mill an edge in highly competitive markets.

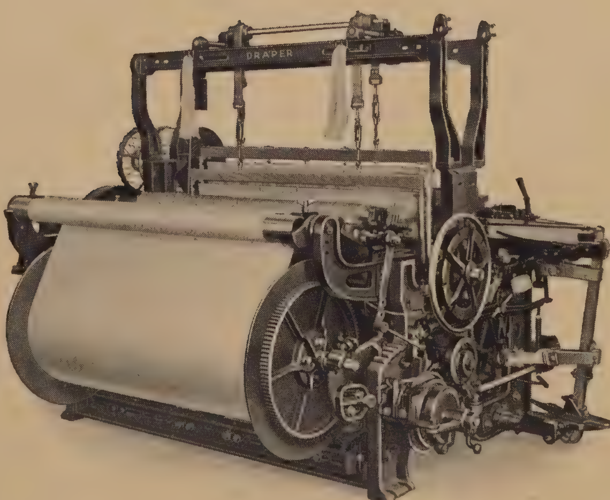
Mills that have them are satisfied.

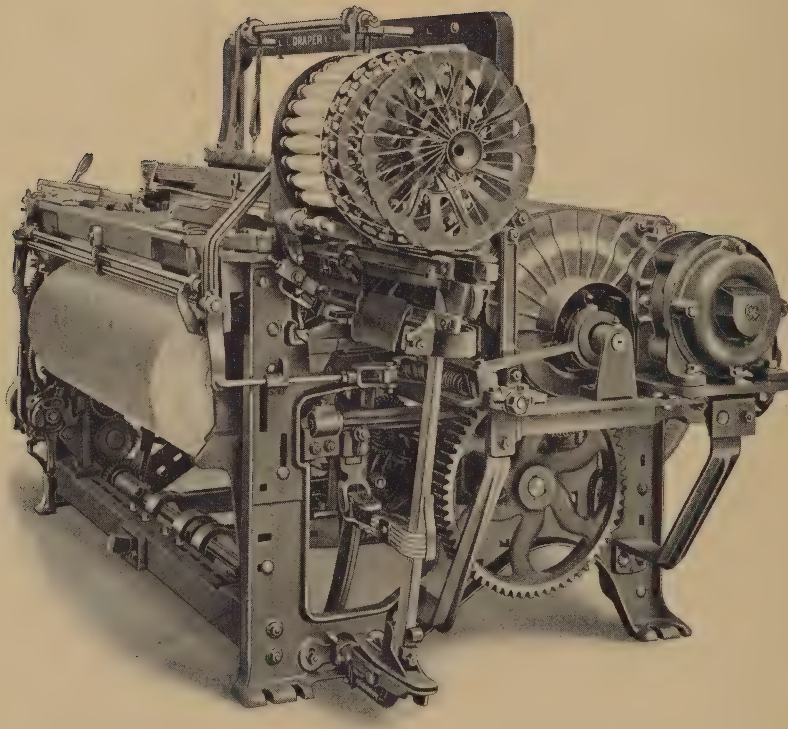
Mills so far unable to put in high speed looms are looking forward to the time that they can.



NEW XD MODEL HIGH SPEED LOOM FOR DUCK

REAR
VIEW
OF
XD MODEL
FOR
#10 DUCK
SHOWING
26″ BEAM





X MODEL HIGH SPEED LOOM FOR COTTONS
It is Fast Replacing the Slower E Models

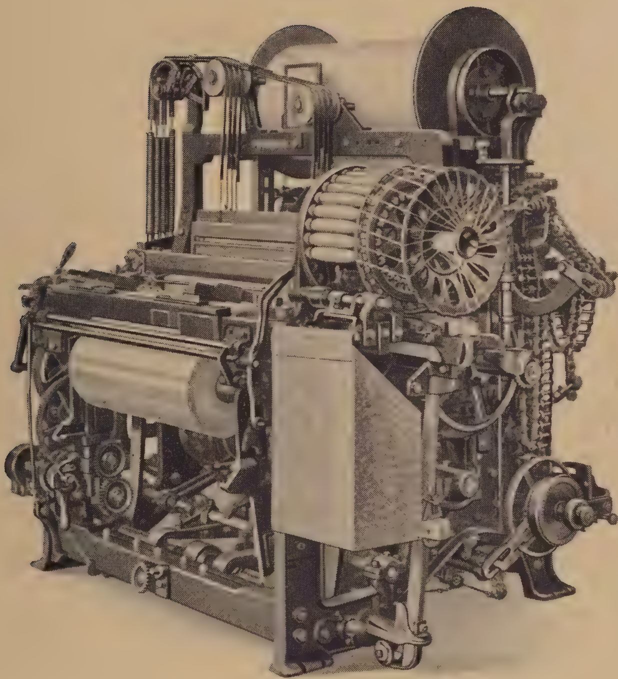
The Four Models

The X Model loom was brought out late in 1930 to weave cotton fabrics at 192 picks per minute—giving an average gain in cloth woven of 20 per cent.

Some mills increased this gain by running the new looms at 202 picks—and even higher.

The first large order of X Models was sold to Bibb Mfg. Co. in April, 1931. More than 32,000 X Models are now installed in mills all over the country. By economy of operation and high quality of product they are taking over the field formerly held by the E Model.

An early problem laid down for the X Family was to build a filling-changing loom for rayon.



X MODEL HIGH SPEED LOOM FOR TERRY TOWELS

The shuttle-changer had proved uneconomical.

It took years of hard work, study and mill tests, but when the XK Model was ready it proved a magnificent success on all one-shuttle rayon weaves.

Its mechanisms and a large part of the individual parts of the loom are of new design for rayon and have been thoroughly tested on a variety of weaves.

Over 12,000 XK's have been sold for rayon.

The XK is also built for fine and fancy cottons to replace the old K Model.

The XL Model met the demand for a high speed broad sheeting loom. A 90″ loom runs at 120 picks. It takes the place of the L and O Models.

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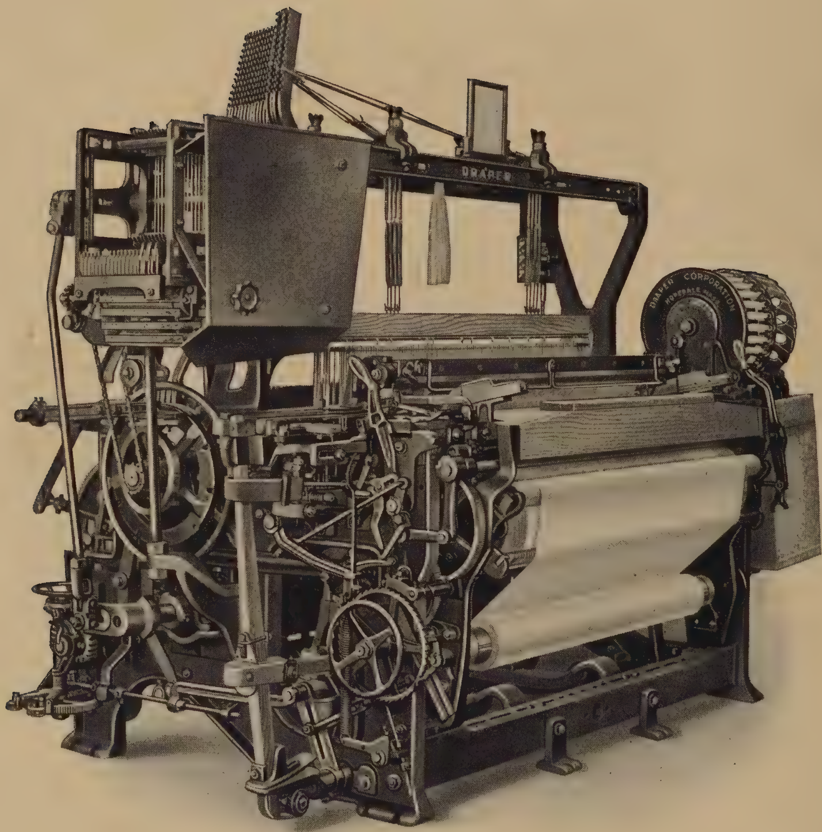
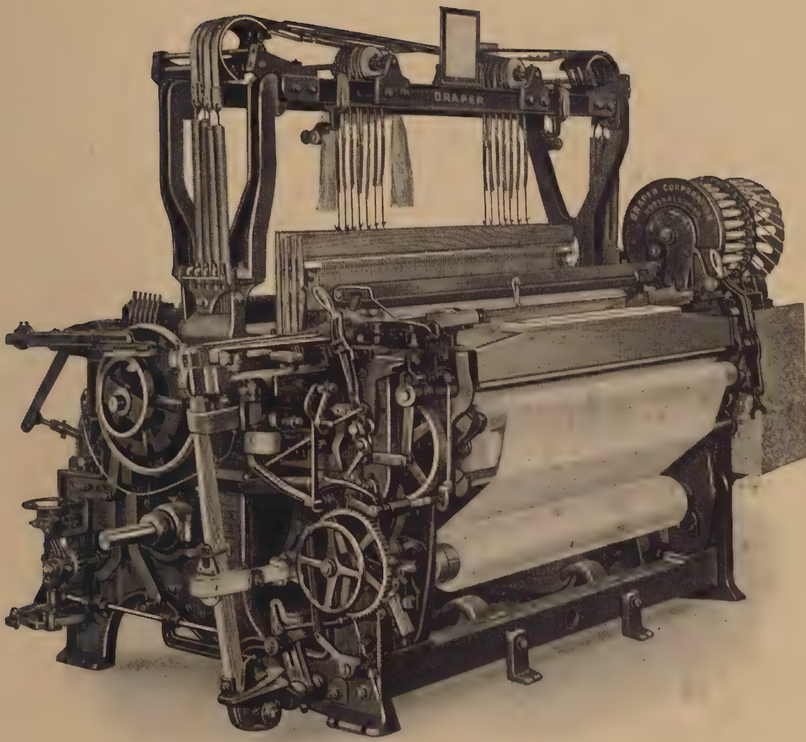


X K MODEL HIGH SPEED LOOM FOR RAYON WEAVES
Built Also for Fancy and Plain Cottons with Dobby or Cam Motion and High Roll Take-up

The X D replaces our Modified D and P models, but can be built on varying specifications to handle a greater variety of fabrics than both of the old models.

It is a sturdy loom, weighing 550 pounds more than the X K. It has been carefully and precisely designed to run at as high speed as the X K in spite of the heavier construction.

As a rayon loom it takes all weaves that need the stability of a heavier loom, and the wider weaves up to 60″ and more.



X K MODEL LOOM WITH BROWN SPRING TOP
Has 10 Harness Capacity, 15/32″ Gauge, for both Rayons and Cottons

As a cotton loom it takes bobbins up to 9-1/2″ long, yarn beams up to 26″, large rolls of cloth, and weaves medium duck and the wider fabrics up to 70″.

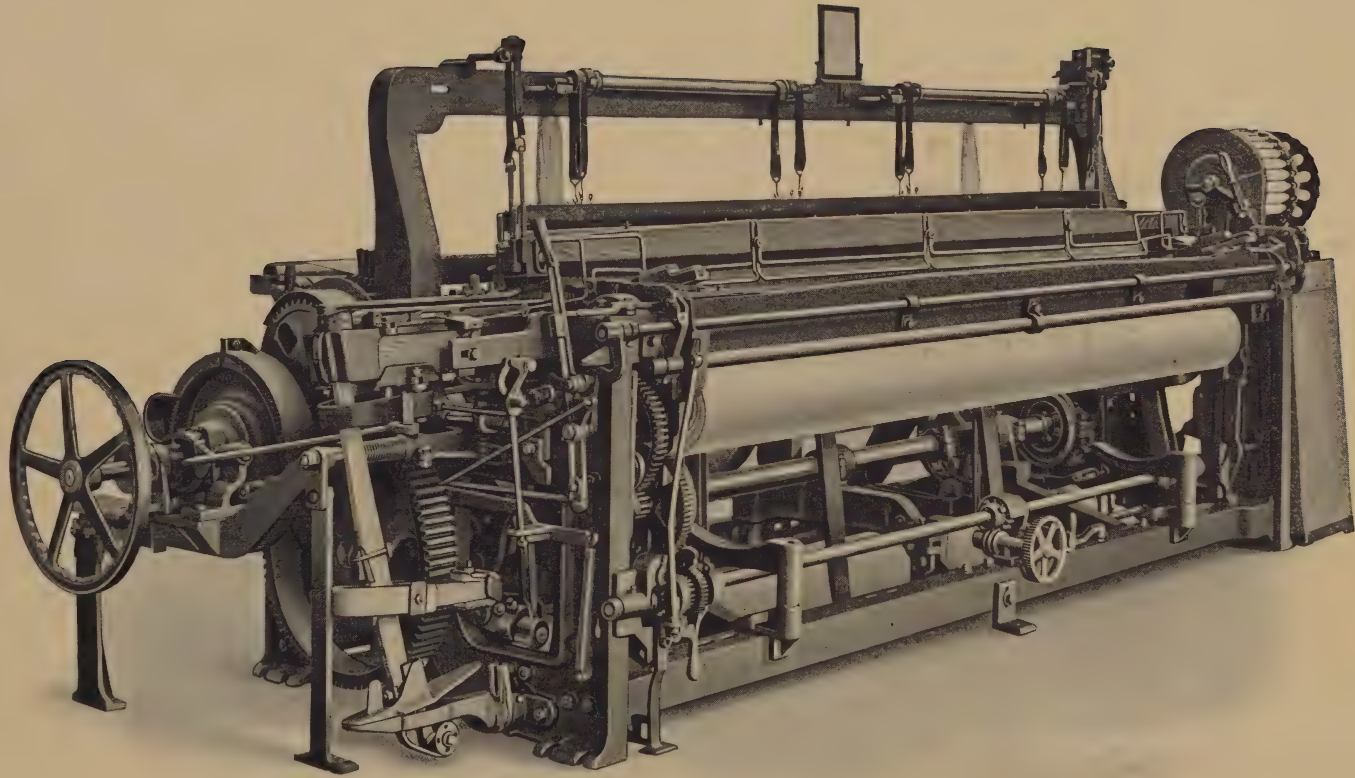
So we say the X Family has grown up.

The various models of the group have been developed and tested to the requirements of high speed weaving of most of the common fabrics woven with one shuttle.

Thousands of the looms have been sold.

They are a success.

High speed weaving is now desirable from the profit standpoint. In the near future it will be necessary.



X L MODEL HIGH SPEED BROAD SHEETING LOOM
90″ Loom Runs at 120 Picks per Minute—Replaces Slower L and O Models

② COTTON CHATS
TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A
DRAPER CORPORATION HOPEDALE MASS
NUMBER 331 MAY 1939

The X Family Has Grown Up
XD Model is the New Member

The X Family of looms has grown up.

The fourth member of this high speed family made its debut at the recent Greenville show.

This new member was the XD Model. It is sturdily built for broad rayons and the heavier weaves of cotton, from broad fancies to medium duck. It is the high speed loom that replaces the Modified D of our older models.

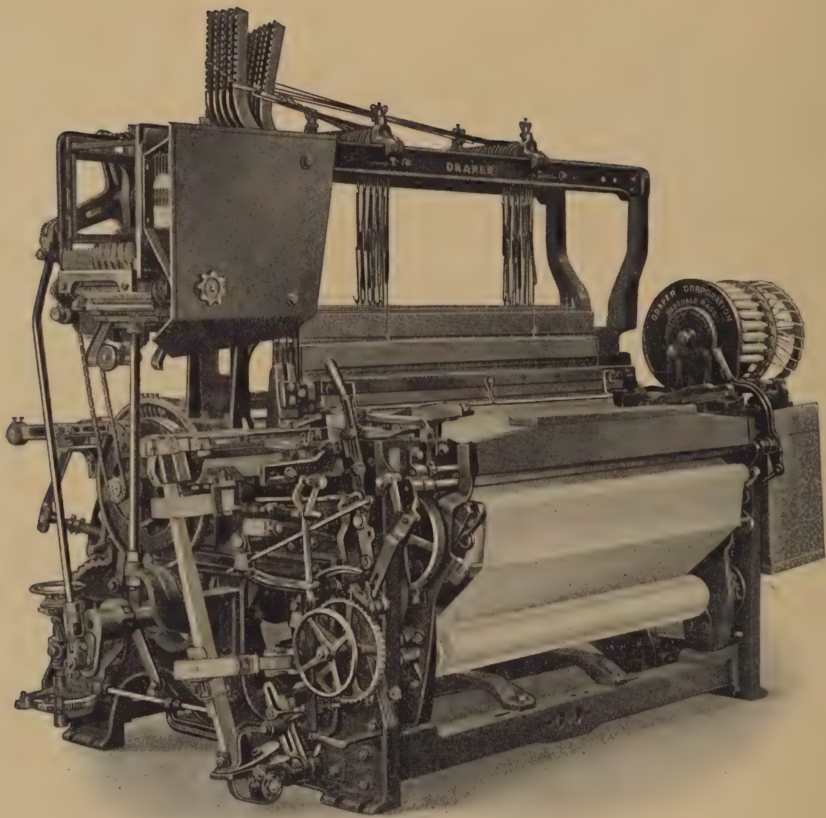
It has broadened the field of the X Family.

There is now an X Family high speed loom for nearly every fabric, cotton or rayon, woven with one shuttle.

Almost 50,000 of the first three models have been sold to northern and southern mills.

This is a mere 10 per cent of the looms that will ultimately be replaced by members of the X Family.

But these 50,000 looms are justifying every claim we have made for them.



NEW X D MODEL FOR HEAVY AND WIDE RAYONS

Weighing 350 Pounds More Than the X K Model a 44″ Loom
Runs at 174 Picks per Minute on Rayons

They have proved that the industry needed the high speed loom.

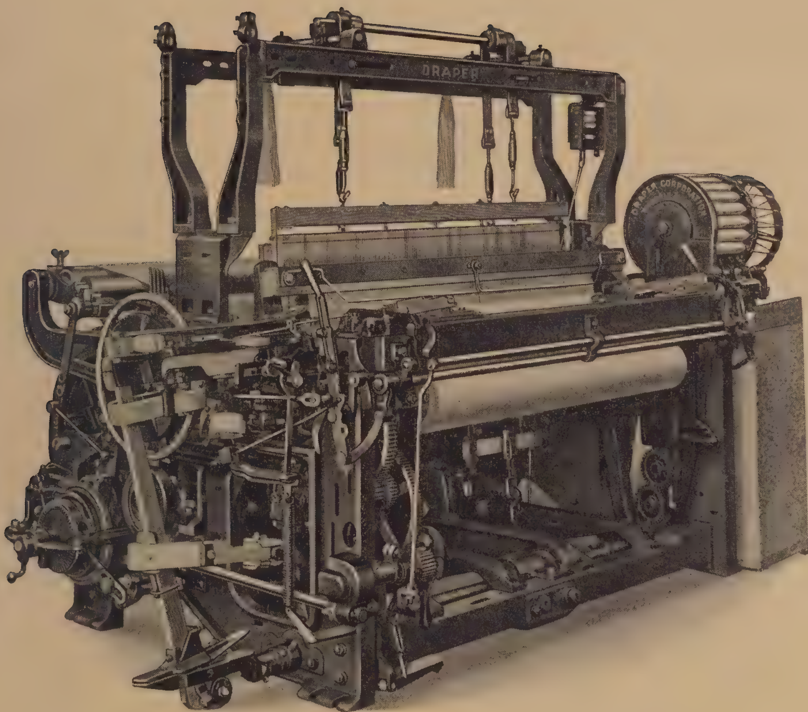
They are weaving more cloth per loom and per hour.

They are weaving better rayons and better cottons—both fancy and plain—at a lower cost.

They set the standards in quality and cost—giving the mill an edge in highly competitive markets.

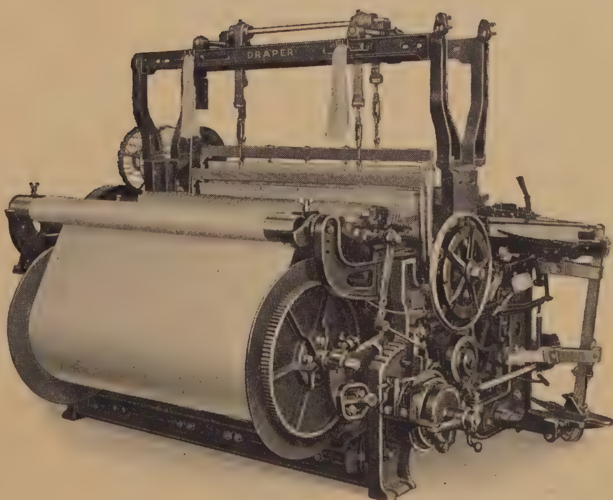
Mills that have them are satisfied.

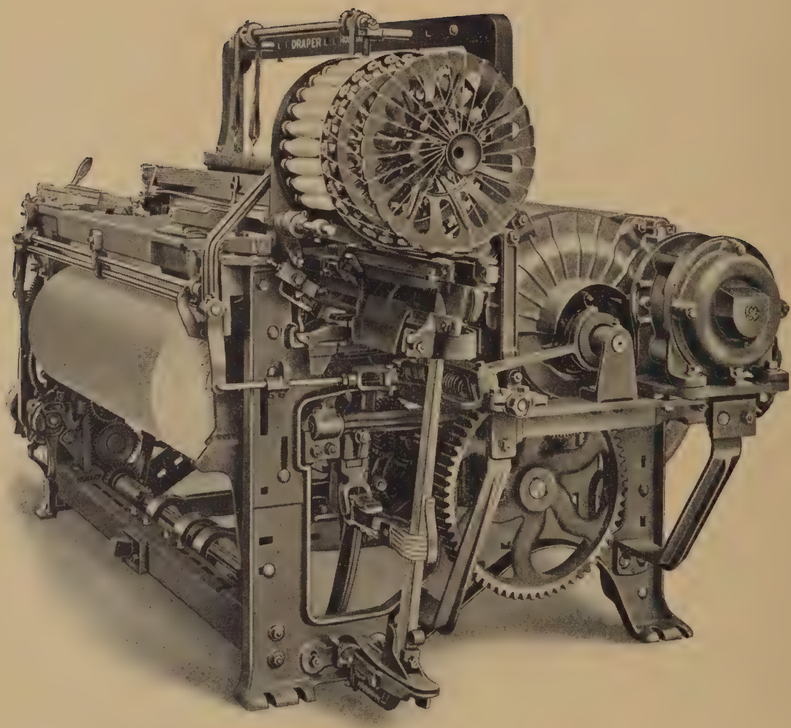
Mills so far unable to put in high speed looms are looking forward to the time that they can.



NEW XD MODEL HIGH SPEED LOOM FOR DUCK

REAR VIEW OF XD MODEL FOR #10 DUCK SHOWING 26″ BEAM





X MODEL HIGH SPEED LOOM FOR COTTONS
It is Fast Replacing the Slower E Models

The Four Models

The X Model loom was brought out late in 1930 to weave cotton fabrics at 192 picks per minute—giving an average gain in cloth woven of 20 per cent.

Some mills increased this gain by running the new looms at 202 picks—and even higher.

The first large order of X Models was sold to Bibb Mfg. Co. in April, 1931. More than 32,000 X Models are now installed in mills all over the country. By economy of operation and high quality of product they are taking over the field formerly held by the E Model.

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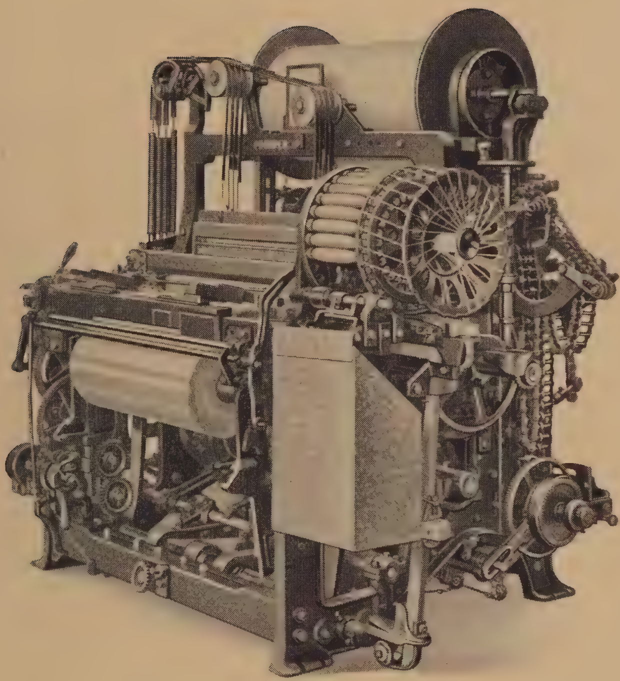

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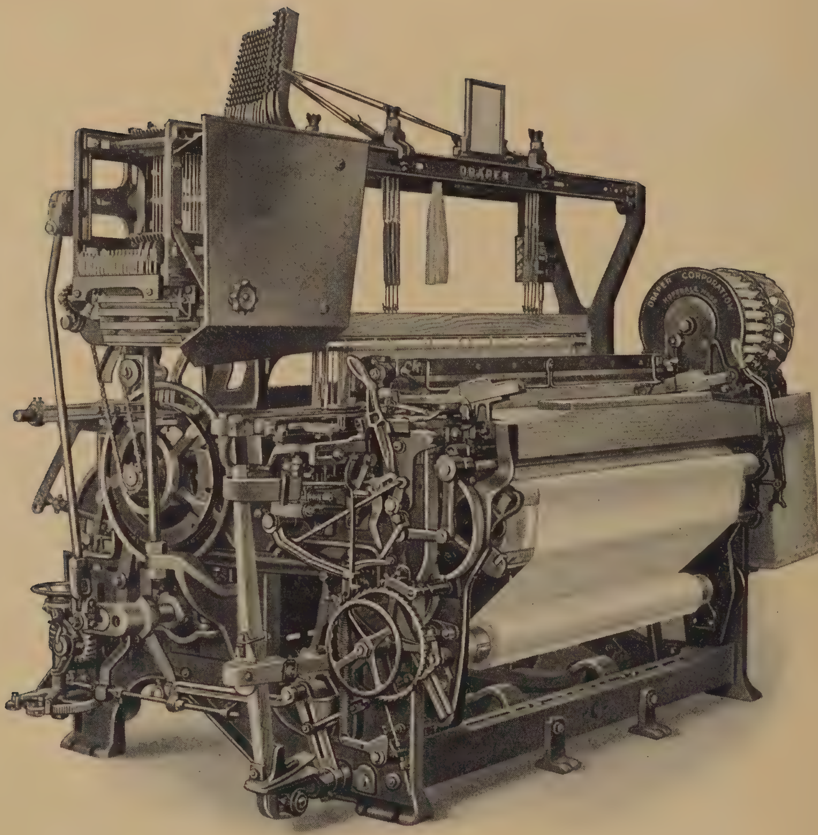

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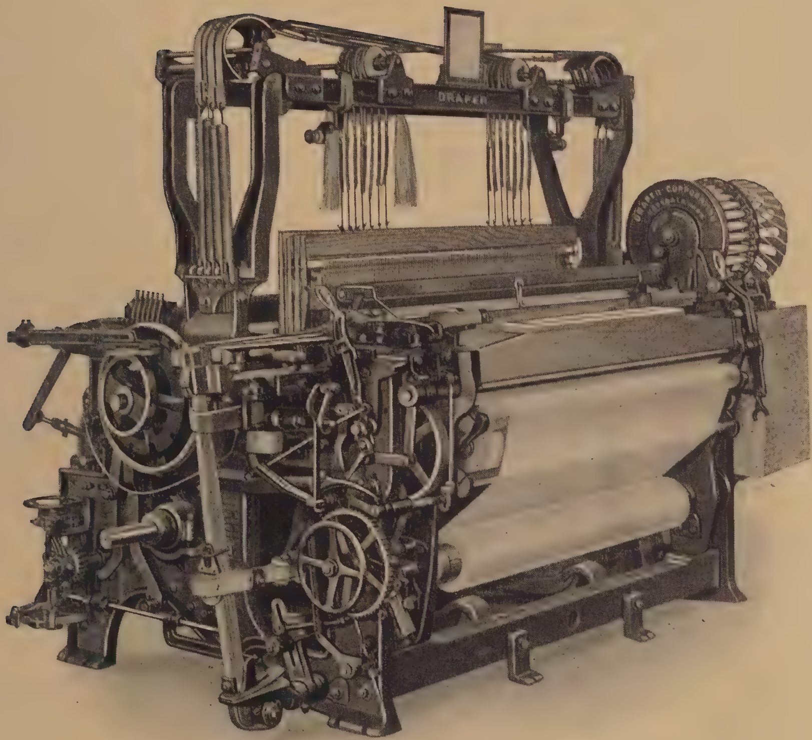

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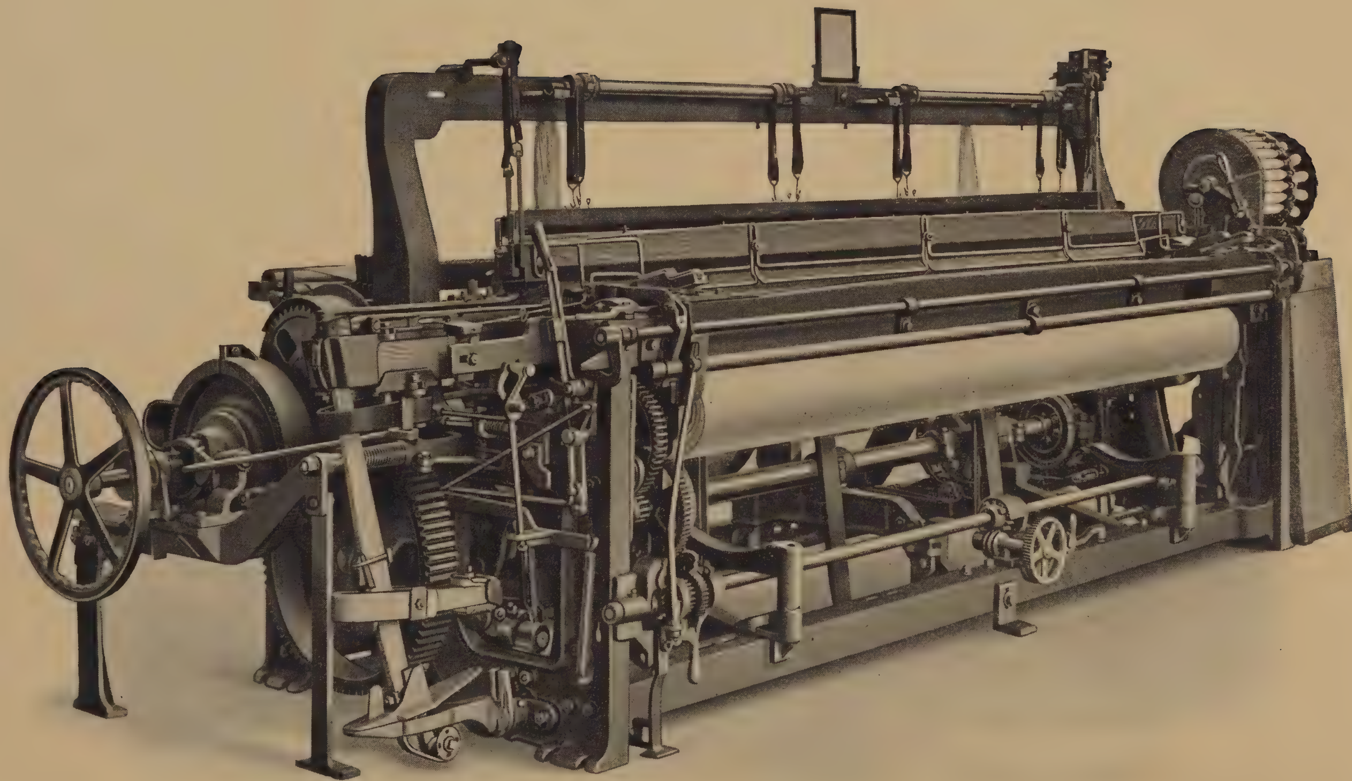

X L MODEL HIGH SPEED BROAD SHEETING LOOM

90″ Loom Runs at 120 Picks per Minute—Replaces Slower L and O Models

COTTON CHATS

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PRINTED IN U S A

DRAPER CORPORATION HOPEDALE MASS

NUMBER 332 OCTOBER 1939

A New Rayon Loom That Has Exceeded Expectations

A surprising thing has happened to our new X D rayon loom, designed to weave wider and heavier rayons.

We planned the new model to be an unusual loom.

We started by giving the loom weight. We built it strong where strength gives staunchness and stability.

We built into it all we had learned in twenty long years of intensive research in building looms for rayon.

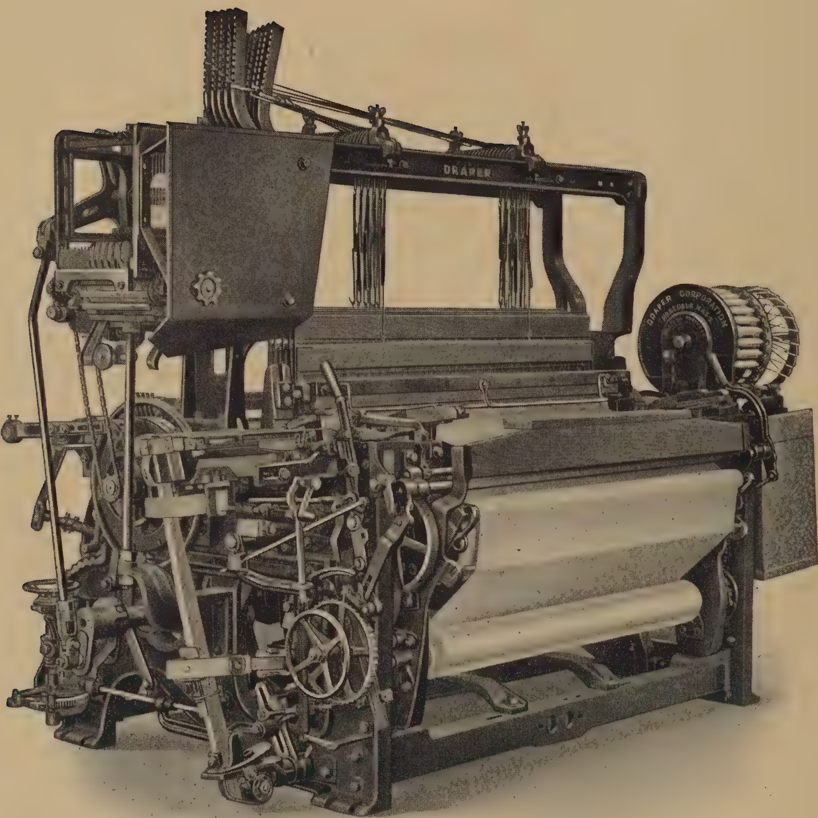
We put the new loom under the most rigid tests in our experimental weave room.

We had looms tested under regular mill conditions.

The hard test of a week's run under show conditions at Greenville last April was satisfactory.

Then we began to sell the X D to mills that wanted to weave wider or heavier rayons.

It filled the bill. Quality of the cloth was high. Everybody was pleased.



XD MODEL RAYON LOOM

Caps the Climax of 20 Years Devotion to Building Looms for Rayon

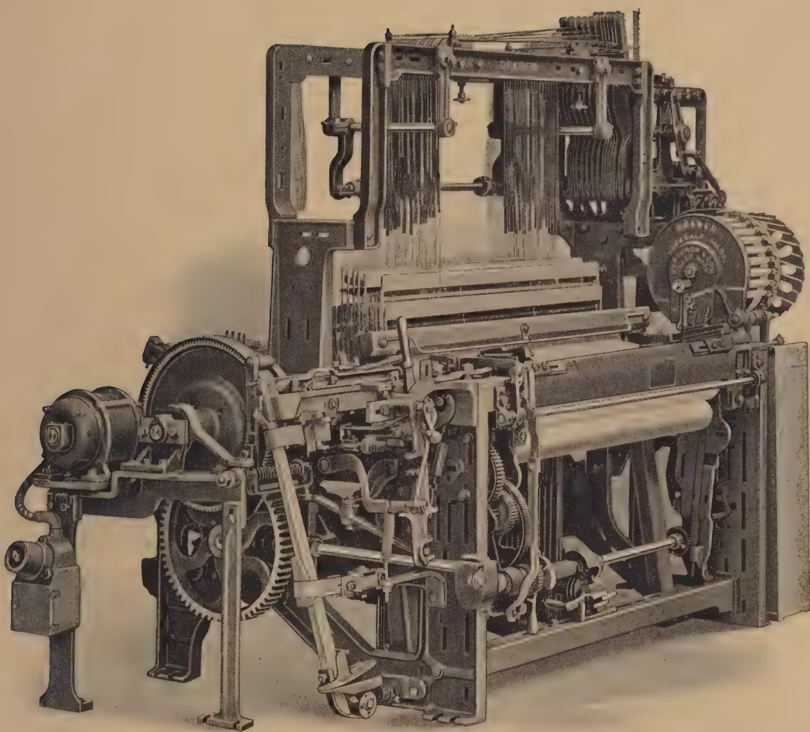
Then the unexpected began to happen.

One mill reported that with the looms running side by side the X D developed more speed than the X K.

A mill tried some of its lighter fabrics on the XD and found they took off cloth superior to anything they had previously obtained.

It is not unusual for a mill to find that they can run Draper looms at a higher speed than we set.

But as a rule a heavier loom cannot be run at the speed of its lighter counterpart.



K MODEL RAYON LOOM OF 1926
The Type of Loom on Which the Great Majority of American Rayons Were Woven during Ten Years up to 1931

Investigation showed that the distribution of the increased weight of the XD at the points where it means stability and smooth-running opened the door to higher speed and improved quality.

Speed means more yards per loom. Quality insures better selling fabrics. These are what mills want today.

The result is easy to guess.

In spite of the proved excellence of our XK rayon loom, in spite of the higher price which XD looms must bring, we are selling many more XD models for rayon at the present time than XK models. Since the Greenville show last April we have sold over 3500 XD looms to a total of 21 mills. More than 500 have been installed.

Mastering the Weaving of Rayon

About 20 years ago we turned our attention to the production of a Draper automatic loom to weave rayon.

Rayon came in as artificial silk, and for a time it was woven on plain silk looms. When cotton mills took it up we began making over E and K models to weave it.

In 1921 we built a special K Model rayon loom. In 1923 we put out the first large order of these looms—1000 for a leading Southern mill. In the next few years millions of yards of rayons were woven on K Model looms in hundreds of mills.

When trouble came in laying the first pick from a new bobbin, the shuttle-changing loom had the call. In 1931 we brought out the C Model that changed the shuttle without the loss of a pick. This model had improvements that still are features of our latest rayon looms.

A first-pick-tension shuttle eye turned rayon loom development back to the bobbin-changing loom.

The XK Model, first high speed rayon loom, came out in 1935. Over 12,500 XK's are running successfully all over the country. About a thousand are on order.

Both XD and XK

The XD was not built to supercede the XK.

The XK still has its place. For the average weave it is the same successful loom it has been.

But where mills find that the greater stability of the XD is reflected in the quality of the fabrics they are weaving, they are now buying the XD—and paying the higher price it must command.

With the XK and XD looms, rayon weaving of all one-shuttle fabrics has grown up and taken its place on a par with the weaving of cottons, woolens and worsteds and silks.

COTTON CHATS

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 333 DECEMBER 1939

WALLACE IRVING STIMPSON

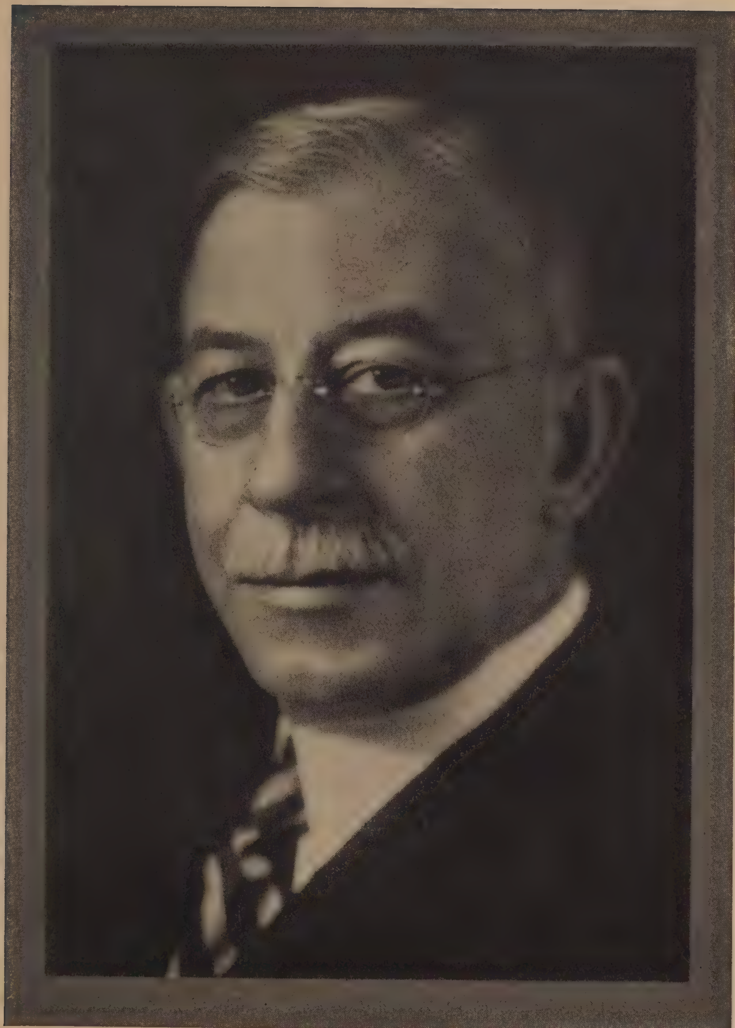
Mr. Wallace I. Stimpson, our beloved fellow member, died Nov. 21, 1939.

Mr. Stimpson had been associated with Draper Corporation and its predecessors during a period of more than fifty years, and in that long service he had held the offices of Director, Agent, Vice President and Chairman of the Board of Directors of the Corporation. As Agent he had entire charge of the sales of the Company.

To his long experience, wise counsel, clear foresight and untiring endeavor, much of the success of this Company is due.

He was a loyal and devoted friend, and a man of unusual ability in his chosen field; his associates feel deeply their loss.

At a meeting of the Directors of Draper Corporation held December 11, 1939, it was voted that the above testimonial be spread upon the records of the Directors of the Corporation, and a copy sent to Mr. Stimpson's daughter.



Wallace Irving Stimpson

WALLACE IRVING STIMPSON

Mr. Stimpson was born in Hopedale, June 16, 1864. He went to work as a boy in the 80's for Dutcher Temple Company and became a salesman for George Draper & Sons more than 50 years ago. As one of the most successful textile machinery salesmen of his time he sold Northrop looms for Draper Company and succeeded the late Governor Eben S. Draper as agent of the company in 1914. Later he took charge of the improvement and development of the loom, and much of the excellence of our present day product is due to his inventive ability.

Inheriting this inventive ability from his father, the late Edward S. Stimpson who was for 68 years in the Draper organization, and trained in the business ethics of the elder Drapers, Mr. Stimpson was well fitted for the outstanding service he was to render to his company and the industry.

On his 75th birthday last June he was carrying on his many exacting duties as an executive of the business.

His death removes the last Draper official whose connection with the business stretches back to the days before the invention of the Northrop loom.

He was a member of both the National Association of Cotton Manufacturers and American Cotton Manufacturers Association, served at different times on the board of directors of several textile mills, and was a director and vice president of the Home National Bank of Milford and trustee of the Milford Savings Bank.

Mr. Stimpson was keenly interested in his home town and the welfare of its citizens. He was trustee of the Bancroft Memorial library, treasurer of the Unitarian church for 13 years, president of the Hopedale Community House, Inc., member of the town finance committee and trustee of the Village cemetery.

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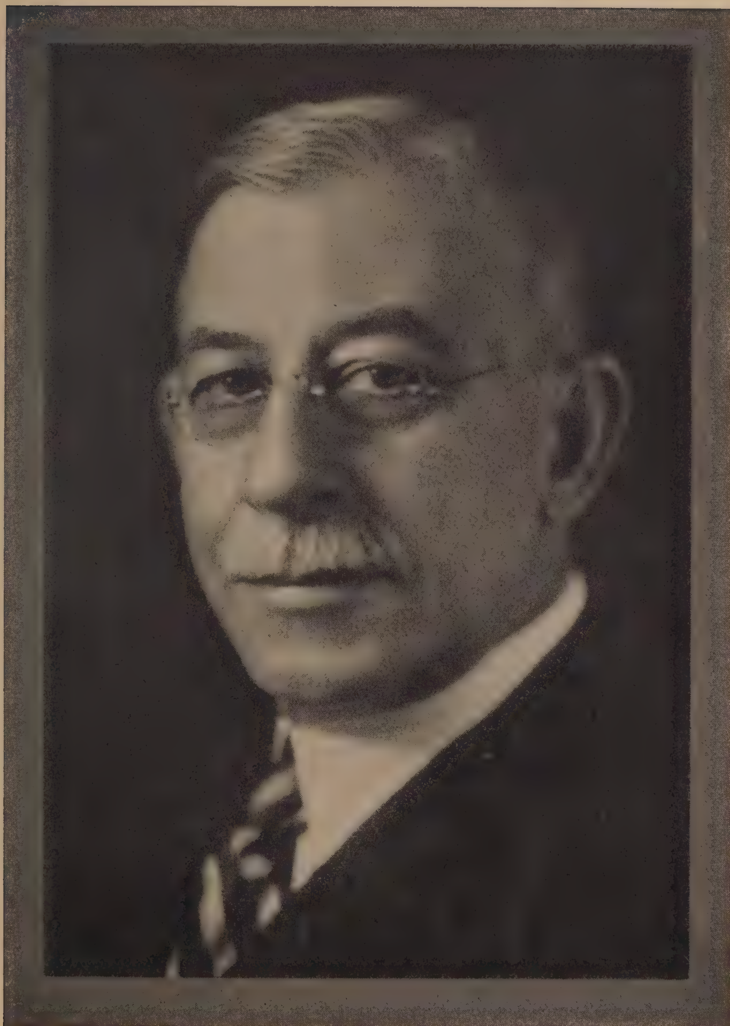

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NUMBER 334 FEBRUARY 1940

From Standing Tree to Finished Bobbins

How Modern Draper Manufacturing Methods and Machines Have Solved Modern Problems in the Age-old Art of Bobbin Building

Beebe River Bobbin Plant and Village—Airplane View

A Model Bobbin Plant

To the devotee of winter sports and the lover of forest clad hills the White Mountains of New Hampshire are the land of scenic beauty.

But when Draper Corporation decided to build a new bobbin plant to be equipped with the latest automatic machinery for the production of the best bobbins it is possible to make, it was Nature's bounty in the supply of raw material, not the lure of Nature's beauty, that made Beebe River in the foothills of the White Mountains the chosen site.

The sturdy mountain-grown trees of hard wood that cover the slopes of the Beebe River valley and the whole countryside for miles around furnish the best of stock for high grade bobbins.

This raw material comes to our doors at a minimum cost whether from our own extensive forest holdings or the woodlots of local owners.

Low cost of raw material is one of the advantages that enabled us to adopt improved methods of manufacture and inspection and still keep prices for superior bobbins at a reasonable figure.

Scrapping the Old, Starting New

It was in 1925 that we decided current methods of bobbin manufacture needed revamping to provide for the use of the latest and best machines obtainable and to introduce new methods that our experience and research told us were desirable.

We decided to scrap our bobbin-making division at Hopedale and all its machines and methods and build new. We chose Beebe River as the location with its low cost

View from Daniel Webster Highway of Bobbin Plant and Surrounding Timberlands of the Beebe River Valley

raw material. Our engineers went to work on plans for a plant to handle in the most economical and efficient manner every process from rough log to finished bobbin.

The new plant went into production in 1928. It is the largest bobbin-making plant in America.

Its equipment includes the most modern machines to be had and special machines developed by our engineers. Methods have been improved as experience and research have pointed the way.

During the past few months the plant has been run approximately at capacity. We have met all deliveries and expect to be able to do so during any rush period.

You Are Invited to Beebe River

Naturally we are very proud of this bobbin plant and the methods of manufacture we have set up to produce both filling and warp bobbins as nearly perfect as it is possible to make anything fashioned out of wood.

You are invited to visit Beebe River. The doors are open and the latch string is out to everyone in the textile industry.

Come up and see the logs go into the roughing mill, watch the precision methods that protect every step of progress through the plant to the finished bobbin, note the many inspections to which the product is subject on its way through. See the bobbins counted and deposited in the shipping boxes by machines that check their own count, making it positively certain you will receive the full number of bobbins you order.

See the devices we have rigged up to make certain that your first order will meet your specifications and that all future orders will be exact duplicates of the first.

At Right

Stacking up
the Logs

Below

One of the Log Piles

The Logs Go
into the
Roughing Shop

For those who cannot come at once—and perhaps to pique the curiosity of some to the point of coming—we give you this pictorial story of Draper bobbin-making.

It can tell only part of the story you will see on a visit to Beebe River. It will lack the life of motion—the motion of great logs on the carriers that feed the roughing machines, the skillful technique of the girls on bushing and ring-setting machines, the disappearance of a rough blank into the maw of an automatic lathe to be fed out on the other side as a turned bobbin.

How to Reach Beebe River

Beebe River is a village in the town of Campton, five miles north of Plymouth, N. H.

About a mile west of our plant, across the valley and Pemigewasset river, is the Daniel Webster highway, which at several points affords excellent views of our plant and village.

The road to Beebe River leaves this highway about two miles out of Plymouth, the turn being to the right.

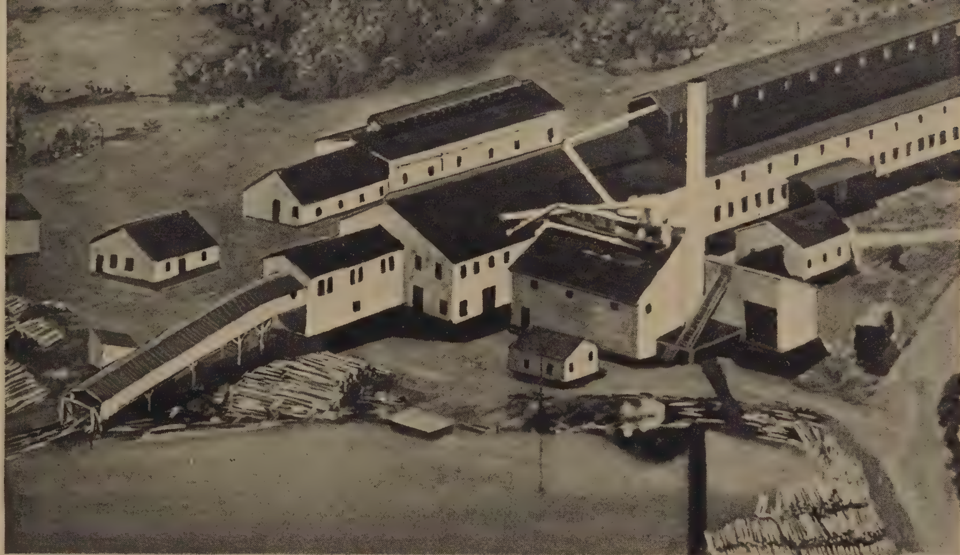
Properly Conditioned Blanks

On the opposite page are pictures of log piles and logs being floated onto the carriers that land them at the cutting-up machines in the Roughing Mill.

In this mill they move through a series of cutting and shaping machines with a minimum of handling. They are always sawed, never split. Finally as bobbin blanks they are delivered to carriers that take them to bins in the Seasoning House.

Seasoning is of first importance in making bobbins that will give long-time service. Our Seasoning House is large, carrying 15,000,000 bobbin blanks in its bins at all

Bobbin Blank



At Left

Roughing Mill

Where Whole Logs

Become Bobbin Blanks

Below

Seasoning House

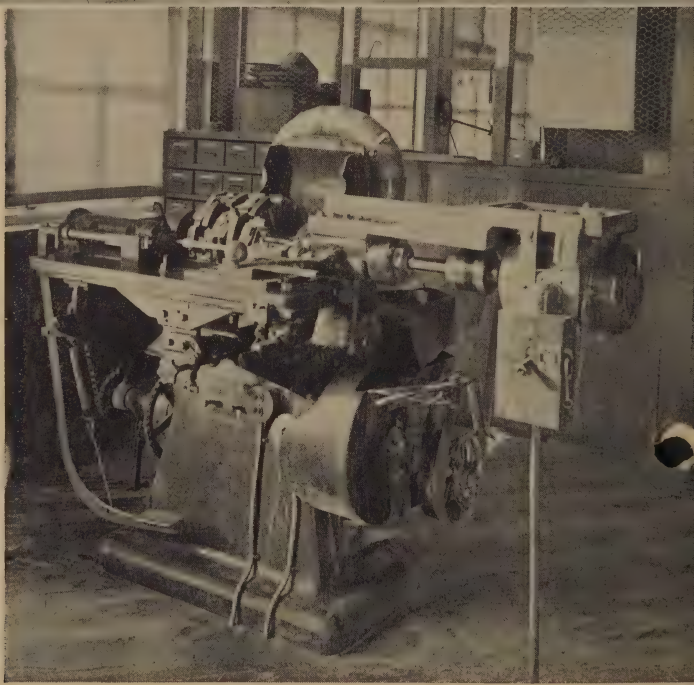
15,000,000 Bobbin Blanks

Always Undergoing

Conditioning Process Here

The Finishing Mill

Cutter Heads Assure Exactly Duplicate Bobbins on Orders and Re-orders



Machine on which Cutter Heads are Set up

times. It is scientifically planned to afford these millions of blanks constant air-drying treatment that is specially designed to preserve the life of the wood and deliver the blanks in practically weather-dried condition.

The stock is under careful supervision to prevent warping or checking. Blanks are seasoned to a definite moisture content.

Master Cutter Heads Insure Accuracy

A second important requisite of good bobbin-making is to be able to get an exact duplicate of the sample bobbin for the order whether the sample is one already in use in the mill or a new selection; that this exact duplication follows through on large orders where there are periodical shipments; and that duplicates will be made on repeat orders.

This is insured by the use of master cutter heads which accurately turn the outside shape of the bobbins with a working tolerance of only .005″; and the machines on which these heads may be set up with the greatest of accuracy.

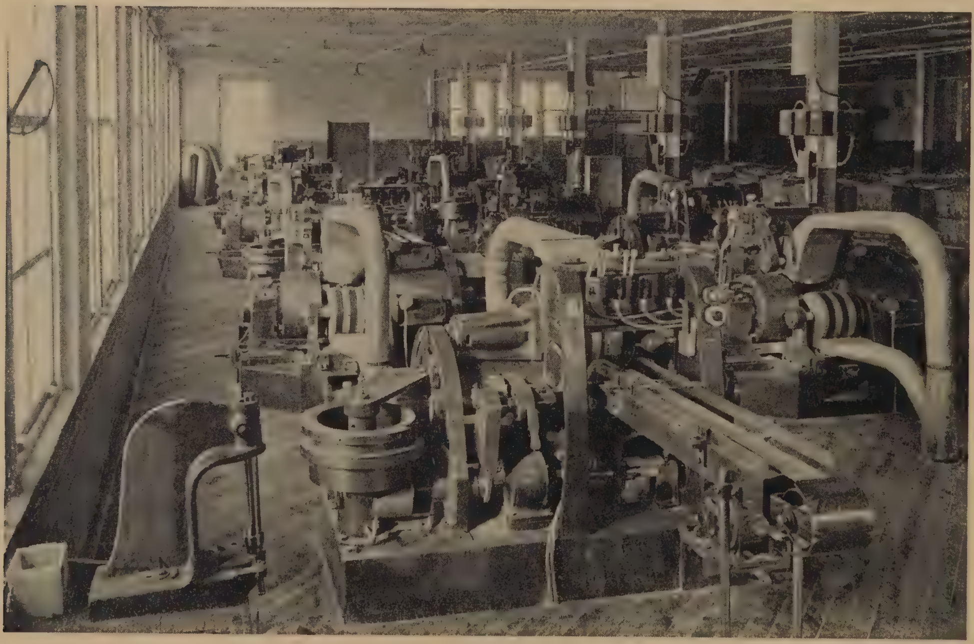
Cutter heads are kept on file during the life of all orders for periodical shipments. Sample bobbins and complete records are carefully preserved for reference in case of re-ordering by the customer.

Making the Rings

Good bobbins require accurately made and properly tempered rings. It is well if they are given some kind of anti-rust treatment.

The whole second floor of an ell on the west side of the Finishing Mill is devoted to the work of forming and

Row of Automatic Drilling Machines



Bobbins Turned to Exact Dimensions on These Automatic Lathes

tempering rings. The rings are made in a battery of automatic machines. They are tempered in furnaces of the most approved pattern for hardening.

In a well-equipped laboratory the rings are given a cadmium plate finish if rust-proof rings are desired.

Step by Step Through the Mill

To follow the bobbin blank on its journey through the Finishing Mill is a most interesting tour for every visitor to Beebe River.

The blanks are brought from the Seasoning House to the first floor of the Finishing Mill by conveyor.

In a process known as equalizing they are sawed to measure and the ends are squared. All rough or damaged stock is thrown out.

Records show that by this and previous inspections over 60% of the log stock cut is rejected.

A Bobbin No Better Than its Hole

All future processes—especially the turning which must favor the direction of the grain—depend upon the drilling of the hole to fit the spindles of the lathes.

Draper automatic precision drillers do this job in a manner to give most satisfactory results.

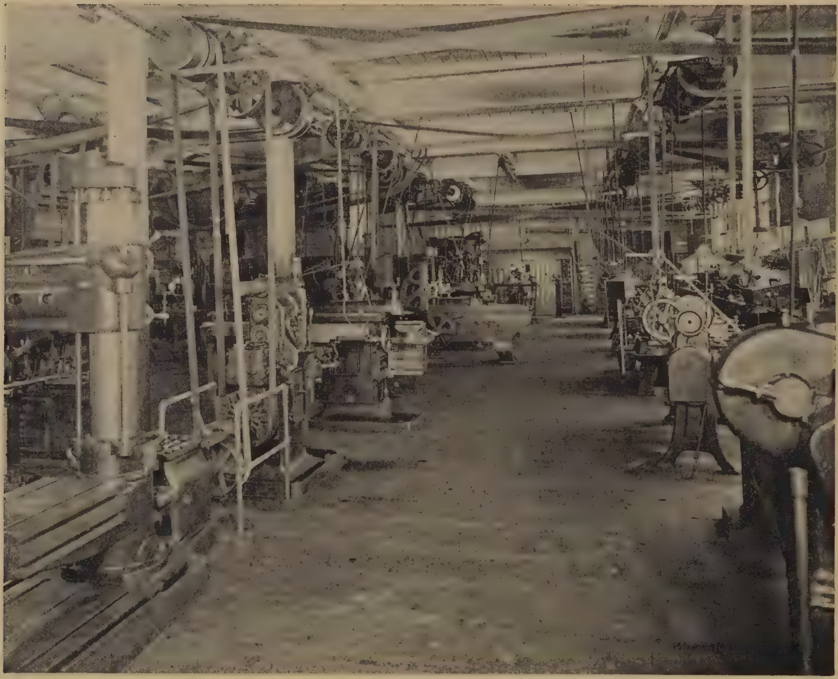
These drills and the turning lathes to which the blanks now go occupy large sections of the second floor.

The turning lathes receive the blanks by automatic belt feed. The turning is accurately done by the cutter heads specially prepared for the order in process.

The blank now has become a bobbin, but the freshly turned wood needs immediate attention.

The treatment depends upon whether the bobbins are to be enamelled or finished with shellac.

Part of the Interesting Third Floor



Plant Machine Shop—First Floor

Oil Dipping and Enamelling

The big rattlers on the first floor clean the new bobbins of all sawdust and chips. The sanding machine gives them a satin-smooth finish and they are ready for the protective treatment that is to preserve the wood.

All bobbins that are to be finished with shellac are now given an oil bath, by dipping or soaking, and are thoroughly dried in a room where a high even temperature drives the oil into the wood.

They are again rattled after this treatment.

Bobbins that are to have an enamel finish go from the sanding machine to the enamelling room.

Here, after a filler has been applied to close the pores of the wood, the enamel is applied by dipping and baking in special ovens that insure a hard smooth coat. Two to six coats are applied according to the needs of the mill for whom the bobbins are ordered.

Precision Machines and Skilled Operators

The remaining steps in processing the bobbins take place on the interesting third floor where our ingenious machines, skilled operators, sensitive hands and sharp eyes give the final touches and careful inspections that insure quality in Draper bobbins.

On Draper precision reamers the bobbins are reamed to a perfect spindle fit, guaranteeing uniformity of fit of all bobbins on an order.

In the work of placing rings, bushings, shields and tip shields, all machines are specially designed, are as nearly automatic as possible and are manned by skilled operators. Visitors to the plant are often surprised at the speed and skill with which the operators of these machines turn off the work and precision with which it is done.

Each Bobbin Tested to Spindle Run at Speed

All rings, bushings and shields used are made to standard Draper gauges that insure accuracy.

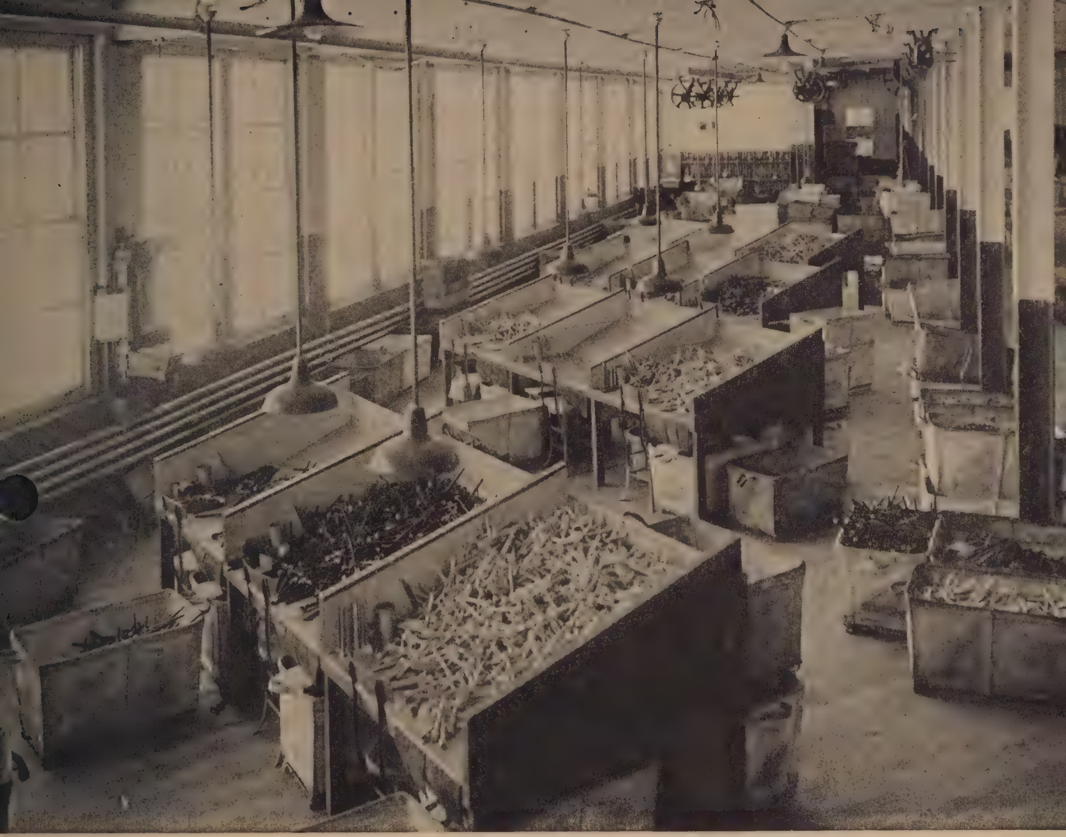
Now bobbins that are to be shellacked are ready for the final coat.

This is applied on automatic machines that brush each bobbin carefully and dry it thoroughly before it is delivered from the machine.

The number of coats applied depends upon the needs of the mill for whom the bobbins are ordered.

Every Bobbin Tested to Spindle

Every bobbin on each order is tested by a skilled operator on the mill spindle on which it is to run at a speed of 8600 to 10,000 revolutions per minute as given by the mill. All that do not run true are thrown out.



Inspection Tables

This is but one of the many tests and inspections to which the bobbins are subjected.

At each step in the progress of any lot of bobbins through the mill, samples are inspected to see that the work is coming right. There are tumblers and rattlers on each job to be used if needed to insure delivery of smooth and clean bobbins to the next job.

Final Hand Inspection

As a final test every bobbin is hand-inspected by girls whose hands and eyes are trained to detect flaws in stock, manufacture or finish as they roll the bobbins on their metal inspecting boards. Any slight defect is cause for

Trained Hands and Eyes Detect Flaws in Stock
Manufacture or Finish

Test-Gauging the Bobbin Butt

rejection on this inspection. Butts and rings are gauged by being passed through a gauge hole in the inspection bench.

Even the Count is Proved

All bobbins are shipped in stout wooden cases to prevent damage or loss in transit. These boxes become convenient containers for mill use.

The bobbins are placed in these shipping cases by automatic counting machines that count them twice—once as they are placed in the machine and again as they are delivered to the boxes.

Any difference between the counts means a recount of that case. This count by machine and checking by a second automatic counter is assurance of full quantity on all shipments.

While building this new plant we sought to improve, if possible, every step from standing tree to finished bobbin; and to increase our capacity to enable us to fill all orders promptly.

Every change in method or machine we were able to find that would speed up production or add to quality in Draper bobbins, was installed.

Bobbins must be made from properly selected stock.

The stock must be properly seasoned.

Bobbins must be accurately drilled and turned.

Bushings, rings and shields must be as near perfect as is humanly possible.

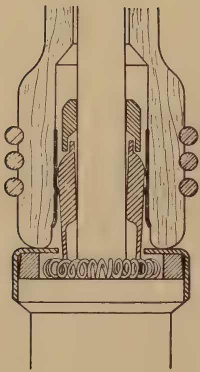
Finish must be smooth, hard and durable.

The finished bobbin must fit the spindle.

These are attributes of quality bobbins. All are made possible by Beebe River equipment. Our inspection system makes them sure.

2 Exclusive Features of

Draper Bobbins



Stimpson Patent Bushing

with

2 Point Contact on Each Leaf

of Stimpson Spindle Clutch

Prevents Rising Bobbins

Draper Patent Bobbins
With Lower Middle Ring

Are More Firmly Held

in the Shuttle Spring

with Either

2 or 3 Rings

Engaged

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A

DRAPER CORPORATION HOPEDALE MASS

NUMBER 336 JUNE 1940

Precision Finish Machines Make Draper Loom Parts Fit

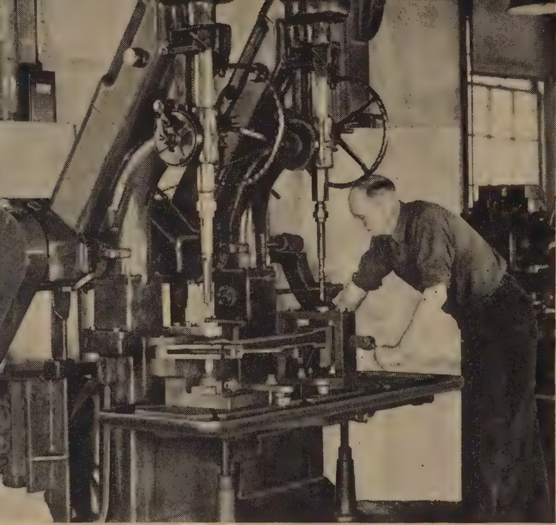
There are men so misled by what they "see" when they look at Draper looms in their weave room—the unfinished outer surfaces that play no part in the loom's operation—that they still have the idea fixers can make repairs on their looms by fitting rough castings made in a local foundry as they did in the days of the common loom.

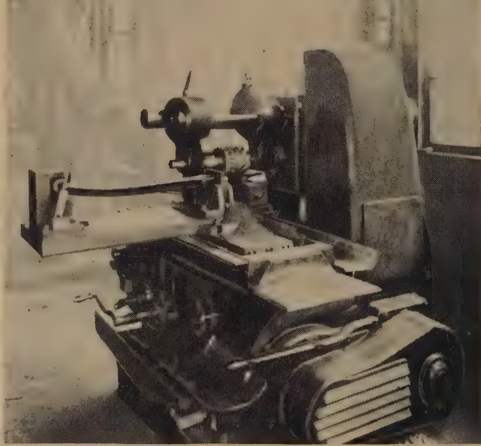
Makers of substitute parts advertised as "just as good" rely upon this belief to sell them.

But these apparently rough castings are not what they may sometimes appear to the casual observer.

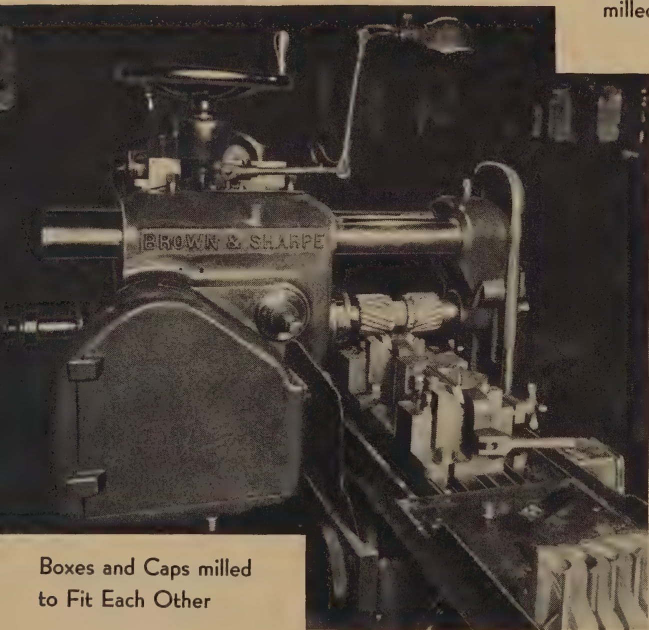
In some essential each of them is finished to the most exact measurements.

For years we have worked towards greater precision and exactness in the operating parts of Draper looms. It has been as necessary as new design and has meant the constant re-equipment of our own shop. No expense has

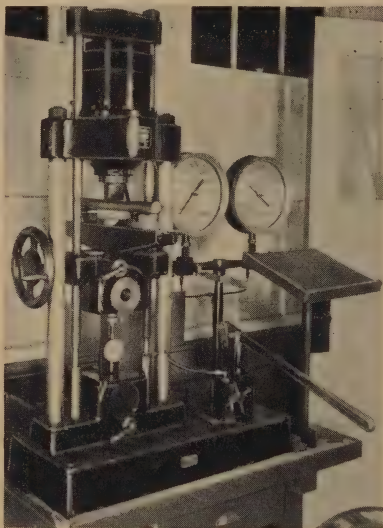




Lay Swords accurately drilled (at left) and milled (above) insure proper position of Lay

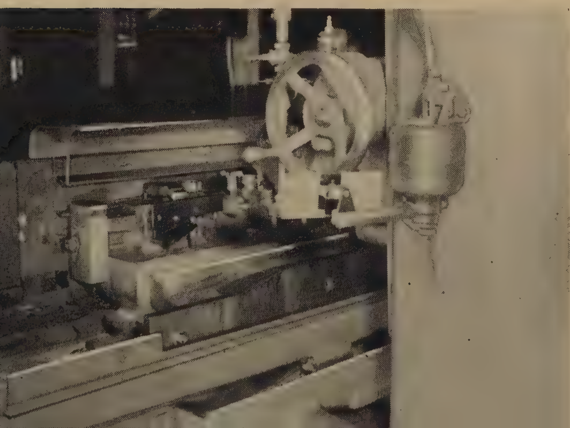


Boxes and Caps milled to Fit Each Other

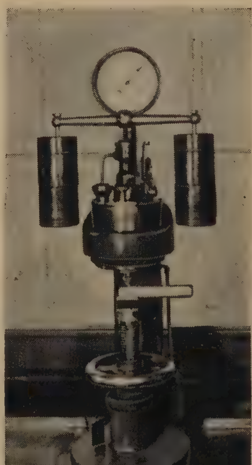


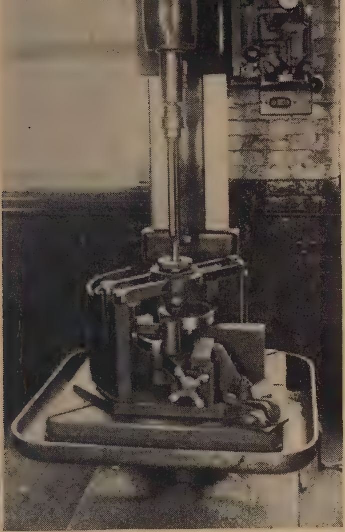
Daily Tests of the Breaking Strength of our gray iron mixtures

Below—This Powerful Machine grinds and polishes Back Box Plates

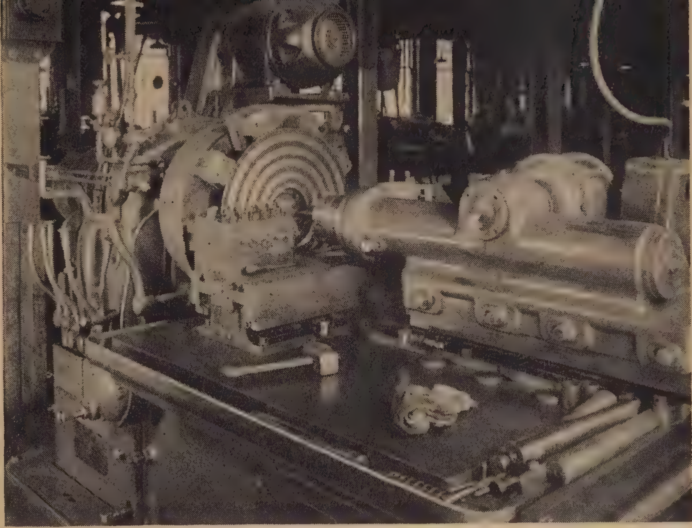


Daily Tests of Hardness of gray iron

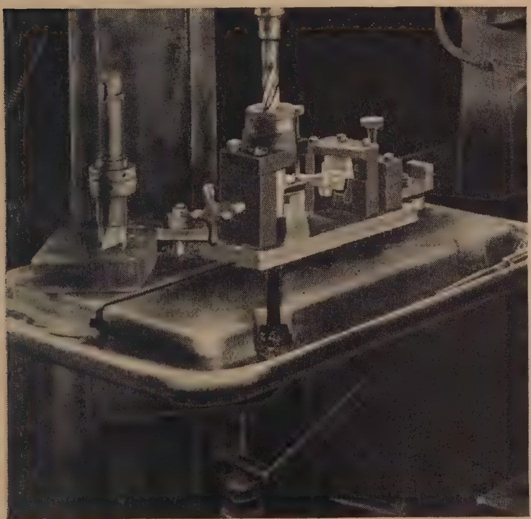




Harness Cams Must be jigged to drill on True Center

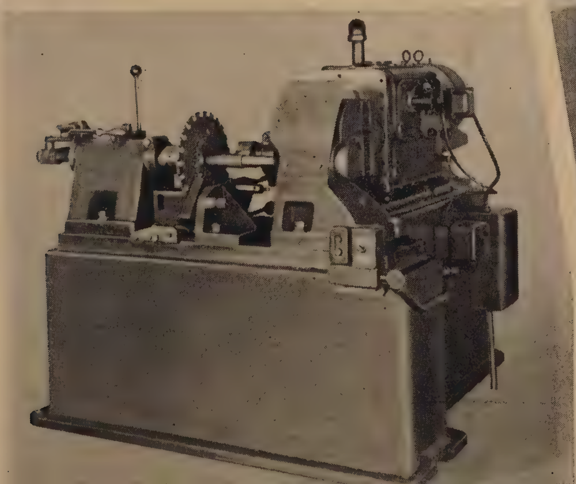


This Big Machine faces Beam Heads, drills and reams them at right angles to the face and counter-bores the Beam Pocket



Drilling and Testing Transferrer

Drilling and Facing Hopper Stands



Left—Milling Bobbin Disc to accurate relation of Notches and Pockets

been spared in building new and better jigs and fixtures or purchase of new metal-finishing machines if something better was to be had.

What this now means in the production of standard, precision-built parts for Draper looms is told in pictures on the inside pages of this Cotton Chats.

Most of the pictures tell their own story. A few of them will be more interesting with some explanation.

The Hopper Stand jig holds three Hopper Stands on its revolving bed. The first position is reserved for placing and removing the Stand. In the second position, the two large holes for the Transferrer Stud and Bobbin Disc Stud are core-drilled and faced, and four holes are drilled. In the third position, five holes are reamed and one is counterbored.

After rerigging the jig, the Stands go through the other side up, and spaces around the holes are faced so that the studs will be parallel and at right angles to the Hopper Stand. A separate four-spindle machine does the necessary drilling and tapping of the holes.

The Transferrer jig drills, inspects and proves the castings. They are locked in a fixture designed to drill the hub in proper relation to the two important curved surfaces of the Transferrer. The hole may come slightly off center in the hub, but if enough off to weaken the hub, the casting is defective and must be thrown out.

The jigs shown are but a few of those you will see when you visit our shops to see Draper parts made.

They have cost fortunes. No one else could afford to duplicate them even if they had the measurements and requirements—which they do not and cannot have.

They are your guarantee of parts that fit and keep your looms trouble-free and efficient if you buy Draper loom repair parts only.

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
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DRAPER CORPORATION HOPEDALE MASS

NUMBER 338 SEPTEMBER 1940

Do Your Shuttles Last 3 Weeks or 10 Months?

How long should a shuttle last on high speed looms of our X series?

A mill in North Carolina set out six years ago to find out for themselves.

They studied the causes of shuttle-wear and how it might be reduced by good fixing.

They made it a lasting job, not a flash of a few weeks —and the results have been cumulative.

Each year the average life of their shuttles has increased. They are still out for improvement.

With 483 40″ X Model looms weaving 80 x 80 prints at 192 picks and operating on an 80 hour two-shift week, they used 1183 shuttles in 1934. With 10 more looms and other conditions the same, they used 554 last year.

In the first year of the test the average life of the shuttles was 4.9 months. Last year it had more than

One Mill Wrecked This Shuttle in 3 Weeks

After 3 Weeks Run in Another Mill

After 10 Months in the Same Mill

These Cuts Made from
un-Retouched Photos

doubled at 10.68 months—very satisfactory for X Model looms on an 80 hour week.

In Dollars and Cents

To reduce these figures to savings in dollars and cents, this mill's shuttles for 1939 cost them $2.39 less per loom than in 1934, an annual saving of $1178.27 on shuttles alone on 493 looms. And of course there was an additional saving on shuttle box parts and improvement in the quality of the fabric woven.

Nor is this all. It looks as if the limit has not been reached. For the first six months of this year 232 shuttles were used. This should mean about 464 for the year, a shuttle-life of more than one year on a two-shift run and increase of the annual saving to $1340.

Wrecked in Three Weeks

As an example of the other extreme in the life of shuttles, we show on Page 2 a shuttle that had been run only three weeks in another southern mill.

The thin wavy back wall tells its own story of a rough reed and of box plates not properly lined up.

Note the contrast in shuttles from the mill where reeds and fixing are right.

Why Some Shuttles Wear Out Quickly

The deadliest foe of long life for the shuttle is a rough uneven reed.

In second place is incorrect lining-up of back box plates and the reed.

The wrecking effects of either are quickly evident and decidedly more devastating on high speed looms.

A washboard back on the shuttle is a sure sign of one or both of these troubles.

Loom reeds vary in quality. Some have both faces smooth and ribs that are uniform. Others may have one

face smooth and the other rough or uneven. Ribs may vary in diameter or shape.

Rough reeds that shave the shuttle cannot be made right by any adjustment of the loom. Discard them.

If reeds are smooth and the variations between two reeds or two faces of the same reed are not excessive, these variations will be taken care of by following the regular Draper rules for lining-up reeds.

Draper Rules for Lining-up the Reed

Use a full length straight edge. It must be long enough to cover the faces of both back box plates.

This is important.

Line up the plates slightly in front of the reed, clearance between reed and straight edge being enough to admit one .008″ drop wire and not enough for two.

To insure smooth running of the shuttle with this line-up, the face of the plates is bevelled at the reed end for a distance of one inch, the depth of the bevel at the end being 1/16 of an inch.

Reeds are now built with the "heading"—wide piece at end of dents—slightly thicker than the dents.

Fixers should round and polish outer edge of this heading, if necessary; but should not drive it back and thus expose the dents to a direct blow from the shuttle.

On looms with fixed reeds, the whole adjustment is made on the box plates. With adjustable yielding reeds, some of the adjustment may be made on the reed.

After lining up reeds and box plates, check both to make sure they are square with the shuttle race and lay end. This is important to keep down shuttle wear.

We explained last month how too much power on the pick causes weaving troubles on high speed looms. It also wears out the shuttle.

To guard against this, some mills paint a band on the picker stick to mark proper height of the lug strap.

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
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DRAPER CORPORATION HOPEDALE MASS

NUMBER 339 OCTOBER 1940

You Want Good Shuttles
Here's How They Are Made

We have designed and made 8909 different kinds of Draper shuttles. More than 3000 of them are currently being sold.

We have this great number of shuttles to meet all mill conditions; and the number is constantly growing as we make developments to meet new conditions or improve older shuttle constructions.

With this great number to choose from, it follows that Draper shuttles are built to order from the mill.

Every one is custom-made.

Every one also is precision-made—built with the accuracy that can come only from mass production.

Custom-made! Mass production!

If these unrelated methods seem to you an unlikely combination in 20th century manufacturing, remember that modern industry dares to follow new and unusual

roads if thereby it can attain the desired result—with us high quality at reasonable cost.

Mass production by machines is the only guarantee of shuttles that will be alike in essential measurements and in accurate settings of all fittings. Perfection of finish, both of fittings and complete shuttle, can come only from the deft handiwork of expert craftsmen.

Every Draper shuttle must pass through the hands of from 161 to 219 machine operators and skilled workers and through from 96 to 124 machines.

These are the workers and machines on one regular cotton or rayon shuttle for which you pay us from $1.35 to $2.30 each according to size and specifications.

They are not totals of operatives and machines in our shuttle department.

They are the workers and machines that have a part in shaping and assembling one shuttle.

Visit Us and See Draper Shuttles Made

The Draper shuttle department occupies nearly two acres of floor space at our Hopedale plant.

It has a capacity of one million finished shuttles per year and the necessary quota of finished blanks and fittings for repairs.

The billets—sawed-out blocks from which shuttles are made—come to us from Tennessee and the Carolinas. They have the ends coated with creosote to protect them during shipment.

One million billets is the regular stock undergoing conditioning in our drying and acclimating rooms. There are 47 sizes of dogwood and 13 of persimmon, all these sizes being carried to reduce waste in manufacture.

During conditioning the billets must be carefully watched. When the proper moisture content is reached,

Regular Stock One Million Dogwood and Persimmon Billets

they are moved from the drying room to the acclimating room, where the process of seasoning is completed.

From Billets to Shuttle Blanks

Transforming the rough billet into a shuttle blank is the first process in making Draper shuttles. It is exceedingly interesting to all visitors to our plant.

After squaring two sides and sawing off the ends, the billets are inspected and graded, and all defective blocks are thrown out.

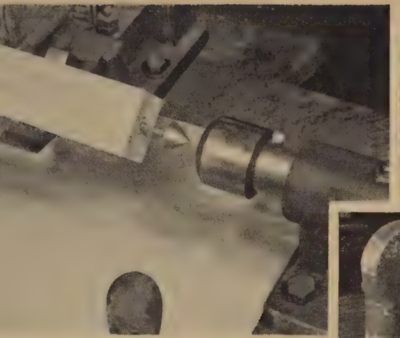
Eighteen machines perform the precision operations. The billet is molded and shaped, spurs are inserted and ground, ends turned and polished, edges rounded, pocket for the bobbin cut and finished, and the blanks are twice machine sand-papered and buffed.

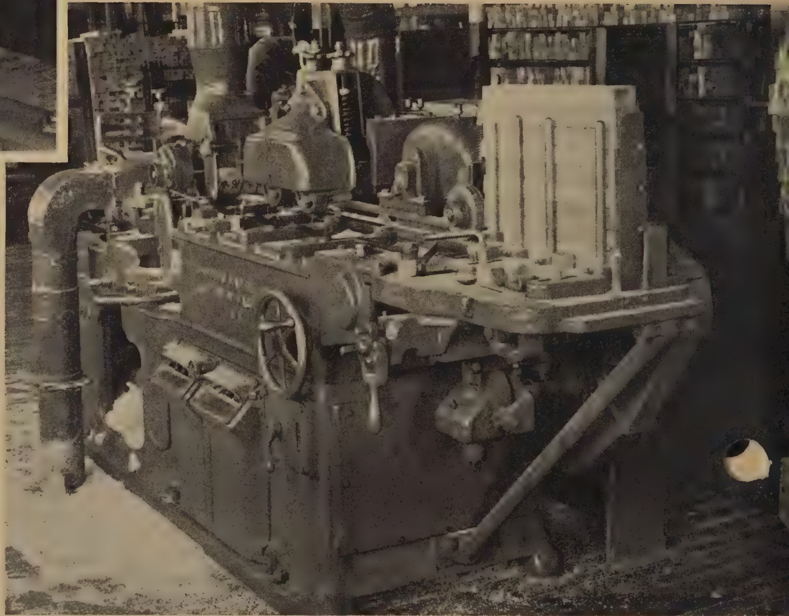
Meanwhile these blanks have been oil-soaked three times and lacquer finished.

Seven hand operations, which include sanding with steel wool after the machine sanding and the finishing touches incidental to numerous inspections, come in at proper stages to give a practically perfect blank.

When shuttles have fibre-covered walls, the extra operations are taken care of in this department.

From Billets to Shuttle Blanks





Above—Inserting Spurs

At Right—Molding the Billets

Below—Profiling

All machines are capable of being set up to do with the utmost precision the shaping or cutting required for the particular blank being made. More than one thousand different shuttle blanks are made in this department.

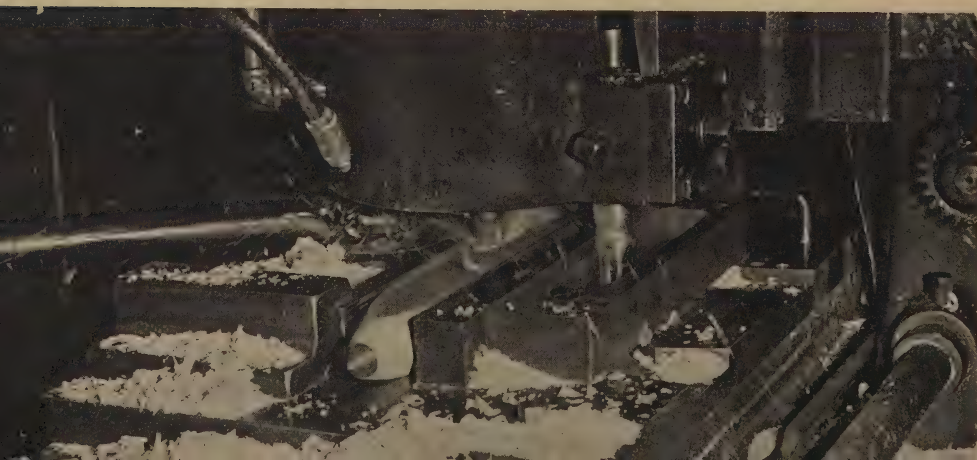
The Profiling machine is one of these interesting precision machines. It cuts the bobbin chamber in the shuttle blank.

Note that the profiler cam is firmly fastened to the machine table, which moves forward and back. Cutter and cam follower are set in the movable head.

The operator, by lever control, holds the follower against the cam, thus guiding the cutter in making the correct chamber cut in the blank.

Before Molding

After Molding



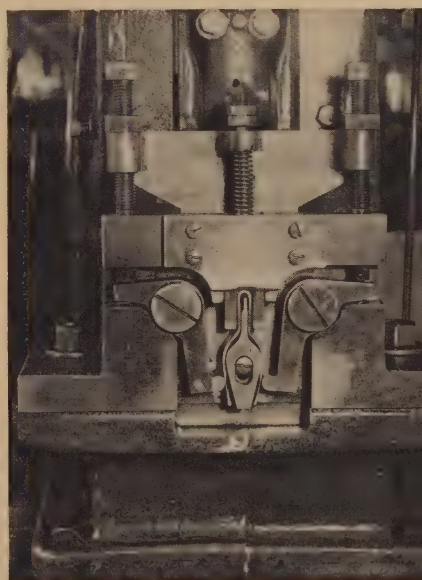
Of the fittings that go into a shuttle, making the eyes shows the most interesting and greatest variety of machines and workmanship.

In the machine shown below for milling slots in the eyes, notice how firmly the powerful jig holds the eyes. The cutter must make duplicate slots in all eyes.

Accuracy is the key word of Draper shuttle making. It is the reason for the great division of jobs and their assignment to so many different jigs and machines.

A perfect finish is the aim of the hand workers.

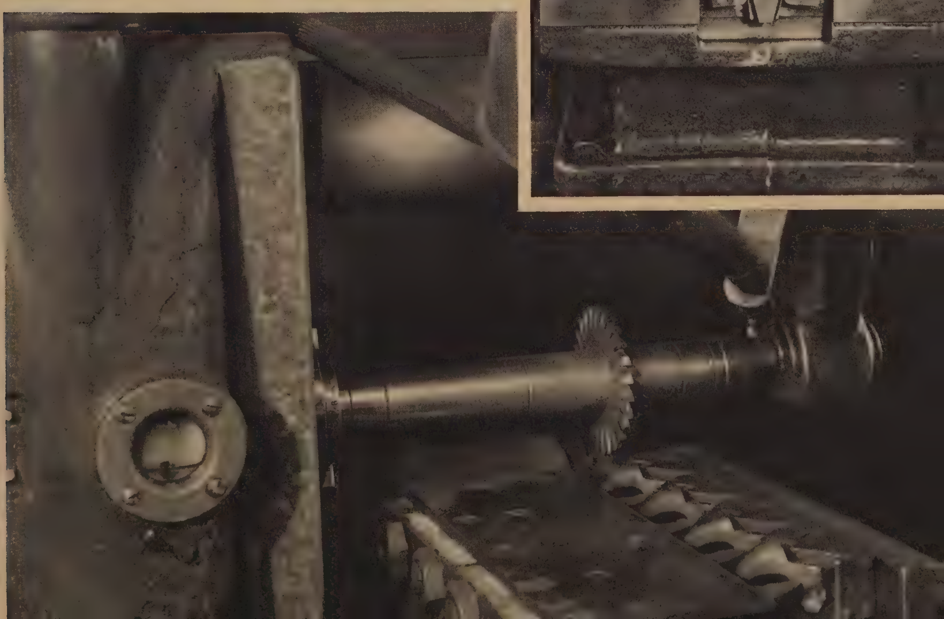
In the making of shuttle eyes, springs, covers and other fittings, the parts for each shuttle pass through from 35 to 59 machines and from 36 to 66 expert hand operations.

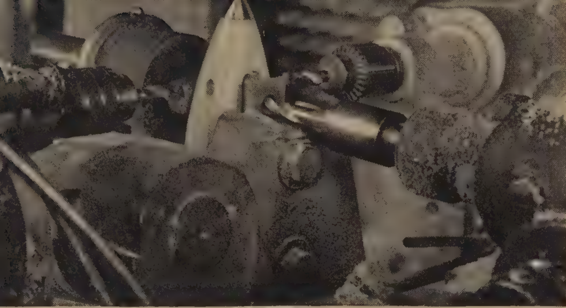


Springs and Eyes

At Right—Bending Shuttle Springs

Below—Milling Slots in Shuttle Eyes

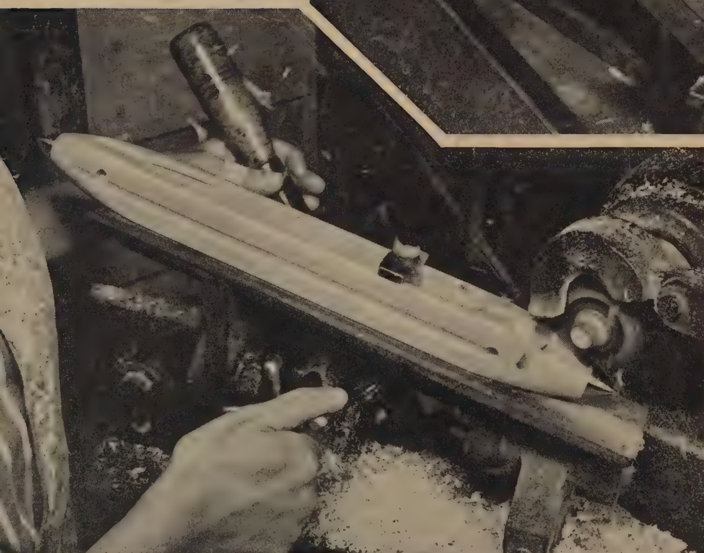




Shuttle Blanks Become Shuttles

At Left
4-Drill Machine Bores Holes for Spring Screws

At Right
Making One of the Cuts for the Eye



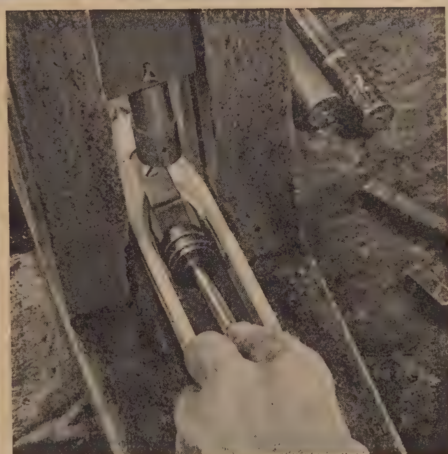
At Left
Whittling the Groove

At Right
Cutting the Feeler Slot

Inspecting

Loop Test for
Every Shuttle

Testing to 300,000 Bobbin Transfers



Every Shuttle Tested to the Mill's Bobbin Size

Blanks Become Shuttles

Now we have reached a most spectacular part of the manufacture of a Draper shuttle—a row of 44 specialized machines each of which makes one of the 44 cuts required to prepare any standard shuttle blank to take fittings of the particular shuttle on order.

These machines are ranged down one side of a long assembly room. On the opposite page are a few pictures taken of some of them in action, but nothing short

of a thrilling movie could adequately picture the scene as the chips fly from whirling cutters and drills that make the cuts into which the desired fittings are to be set later with a perfect fit.

It is ideal mass production. Speed is the keynote; but it is speed with accuracy, for every machine is set to do accurately its particular job.

Only two hand operations are needed to supplement the work of these machines in preparing the blanks for the final assembling of the fittings.

And what a transition to the assembling, finishing, inspection and testing. In the assembling only three machines are used and there are 20 hand operations.

Every part of the shuttle is tested and inspected. We show three of the tests.

One out of every lot of shuttle springs we make is subjected to 300,000 bobbin transfers. If one breaks, the lot goes back to the hardening room.

The spring in every shuttle we make is tested for accuracy with a steel bobbin butt which corresponds to the mill's own bobbin.

Every shuttle is given a loop test to be sure that loops, if formed, will clear and not catch on the point of the eye.

You cannot run a loom without a shuttle.

You cannot run an automatic loom at high speed on modern fabrics without a good shuttle.

A good shuttle cannot be produced at a reasonable price without the most modern machines in a well-planned, labor-saving plant and expert workmen.

The Draper shuttle department is modern in every particular. Its workmen are experts.

Back of them is our research department, striving always for something better to meet new conditions.

Come to Hopedale and see for yourself how Draper shuttles are made and why they are unequalled.

COTTON CHATS

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 340 NOVEMBER 1940

New XP Model Loom For Heavy Cottons

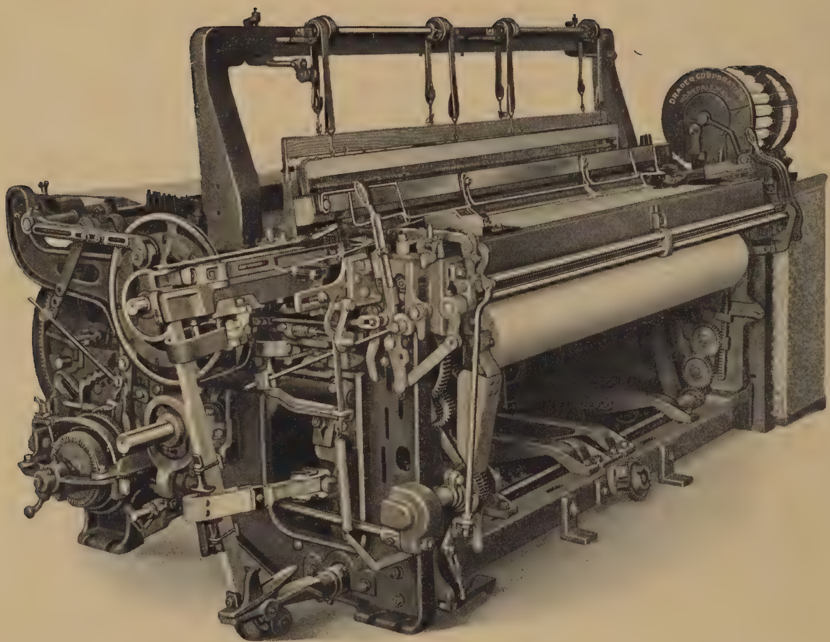
Another new Draper loom model is now ready for your approval. It is the XP Model for weaving many heavy cotton fabrics up to and including light duck.

The new model, like all other Patent X Series looms, operates smoothly and efficiently at higher speeds than any older model ever made for the same fabric range.

In addition, it has benefited greatly from the experience gained in building the thousands of high speed looms already in use.

Experience has proven that extra weight and strength make a steadier running loom, which directly improves cloth quality and reduces loom fixing and maintenance expense. The new model has extra weight and strength, beyond all requirements of the job it has to do.

Experience and Draper research have pointed the way to important improvements in the principal mechanisms of the loom. These are all found in the new model.

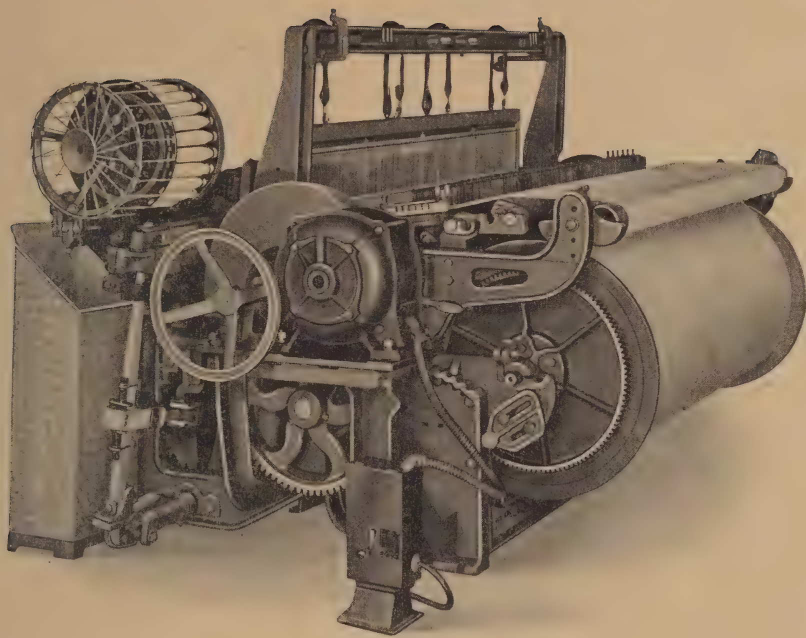


Front View of New XP Model Cotton Loom

The fabric range of the XP Model is from narrow sheetings and drills to light duck, up to 72 inches in width. It will weave chafer cloth, awning cloth, bed spreads, certain rayon mixtures, upholstery fabrics and many others within this range.

The loom is built to give you the savings resulting from at least 20% greater speed. A still further increase in speed may be practical under favorable conditions.

The XP Model is as sturdy as its counterpart, the XD Model Rayon loom. The frame work alone is 241 pounds heavier than in Modified D Model looms of the same width. Middle girts are braced directly to a heavy steel top girt. The breast beam is heavy, with a wide skirt, and each end is secured to the loomside by a three-bolt tie.



Rear View Showing Drive and 26″ Beam

The hopper stand is reinforced and is secured by four bolts in a wide foot, to better support the battery against vibration.

Harness motion may be underneath cams with improved adjustable treadles, or dobby up to 20 harness 15/32″ gauge capacity.

Optional lay and shuttle box constructions provide for sizes of shuttles ranging from a long shuttle with 9 1/2″ bobbin in 1 5/8″ opening to a regular shuttle with 8″ bobbin in 1 3/8″ opening, according to your needs.

The take-up is of the high roll cotton type, made stronger and arranged to accommodate 21 1/2″ diameter roll of cloth.

The let-off is of the Roper type, greatly improved and strengthened, with large band friction. Warp beams may be up to 26 inches in diameter.

Its Place in the X Series

The new model is a worthy addition to the now famous X Series of modern high speed looms.

This series was started in 1930 to replace the older models of looms which have served you so faithfully for so many years. Each model of the new series covers a definite part of the field formerly covered by the older models.

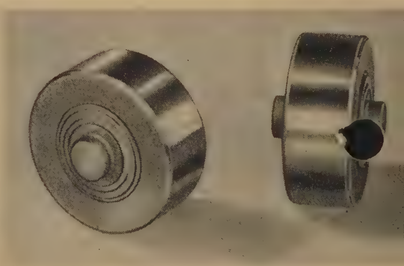
In keeping with this development, the new XP Model replaces the former Modified D and P Models for weaving cotton fabrics.

The X Series is nearly complete. It now includes a high speed loom model for virtually every cotton and rayon fabric woven with a single shuttle.

Anti-Friction Treadle Rolls

In our constant effort to improve Draper products, we often cooperate with leading manufacturers in other fields. This gives you the benefit, not only of our own research and development work, but also of the knowledge and experience of specialists in other industries.

For example, as the result of cooperation with a leading bearing manufacturer, we are now prepared to furnish Anti-friction Bearing Treadle Rolls for many of your Draper looms.



Heavily built, of a chrome alloy steel, these treadle rolls are unusually strong, yet they run freely and smoothly. The hard outer race engaging the cam face increases cam life and eliminates sparks and fire hazard at this point. They are sealed against dirt and lint, and lubricated for a long life. They will save you money.

COTTON CHATS

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 341 DECEMBER 1940

JAMES HENRY NORTHROP

WHEREAS, We the Members of the Board of Directors of Draper Corporation, have learned with deep regret of the death on December 12, 1940, at Santa Ana, California, of James Henry Northrop who, during more than fifty years, had been associated with Draper Corporation and its predecessors, and,

WHEREAS, Mr. Northrop has been one of the outstanding American Inventors, especially in the field of textile machinery; notably his invention of the automatic loom which bears his name, and the use of which has spread throughout the World. Now, therefore, be it,

RESOLVED, that this Board records an expression of its high regard for Mr. Northrop, and appreciation of his marked ability in his chosen line of endeavor, and be it further,

RESOLVED, that we place on record our deep sympathy with Mr. Northrop's family in the bereavement which they have suffered, and be it further,

RESOLVED, that these resolutions be spread upon the records of the Directors of Draper Corporation and a copy thereof be sent to Mr. Northrop's family.

DIRECTORS OF DRAPER CORPORATION

Hopedale, Massachusetts.
December 23, 1940

James Henry Northrop

James Henry Northrop

"Jimmy" Northrop, as he was familiarly and fondly known around our Hopedale shops, was born in Keighley, Yorkshire, England, May 8, 1856. With a trade and some experience as a mechanic, he came to America at the age of 25 and worked for a time in Boston and Woonsocket.

Coming to Hopedale to work in one of the shops of George Draper & Sons, he showed ability as an inventor by developing the Northrop Spooler Guide.

Desire for outdoor life, ever a passion with him, led to an unsuccessful trial of poultry farming.

Back in the shop at Hopedale, he found the Draper effort to develop an automatic loom in its early stages with the Rhoades shuttle-changing device. He set to work by himself on the same problem, and ultimately both the Rhoades and Northrop shuttle-changers were patented. The Northrop device was given a mill trial in October 1889.

Meanwhile he invented a self-threading shuttle and shuttle spring jaws to hold a bobbin by means of rings on the butt. This paved the way to his filling-changing battery of 1891—the basic feature of the Northrop loom.

With development of a workable warp stop motion by other members of the Draper organization and marketing of the first Northrop looms in 1894, the stage was set for the revolution in weaving that has saved our textile manufacturers and the public millions of dollars and led to better wages and working conditions in the industry.

By 1898, with over a hundred patents to his credit and the Northrop loom successfully launched, his great longing for an outdoor life led to retirement at the age of 42. Buying a fruit farm at Santa Ana, California, he spent the second 42 years of his life as a gentleman farmer and at his favorite sport of fishing.

He is survived by his widow, who was Emily Driver of Keighley, five daughters, two grandchildren and three great grandchildren.

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A

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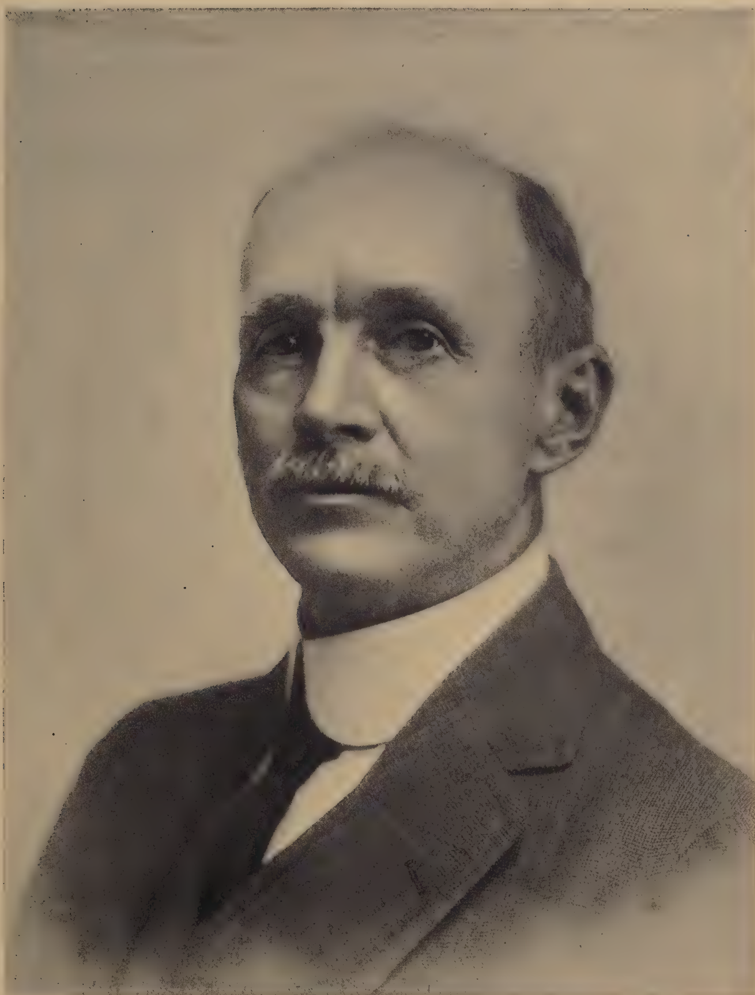

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 342 JANUARY 1941

Huge Stores of Loom Parts The Key to Draper Service

Draper representatives, both sales and service men, give you expert advice on your particular weaving and loom maintenance problems. They make regular calls at your mill for this purpose and will gladly make additional calls at your request. This assistance is only part of Draper service to the textile mills.

Service in Filling Repair Orders

Back of these men are tremendous stocks of loom parts and supplies, and manufacturing facilities geared to give you the quickest possible service in filling your repair orders.

If your order is for any of over 15,000 different stock items carried in Draper warehouses, the parts are already made and waiting to be shipped to you. If not, they can be quickly and accurately made from the original patterns and equipment kept at one of the Draper plants.

Sales and Service Men from Hopedale Office

Benoni J. Truslow   J. F. Boyles   W. F. Northrop   L. Marshall Newell
John D. Gannett   Erwin N. Darrin, V. P.   Robert Mallard

The Hopedale Warehouse

The Draper warehouse serving the northern mills is located in the main plant at Hopedale, where its stocks of supplies are replenished directly from the manufacturing departments. This warehouse carries at all times several months supply of each of the 15,000 stock items.

These items are of enormous variety in kind, size and shape. There are loomsides and lock washers, battery parts and pick motion parts, dobby parts and warp stop motion parts—in fact most all of the commonly needed parts for Draper, Stafford and Hopedale looms of the various models.

At Left

Loom Supplies Leave

Hopedale in Carload Lots

Below

Part of Hopedale Warehouse Where

Several Months Supply of 15,000

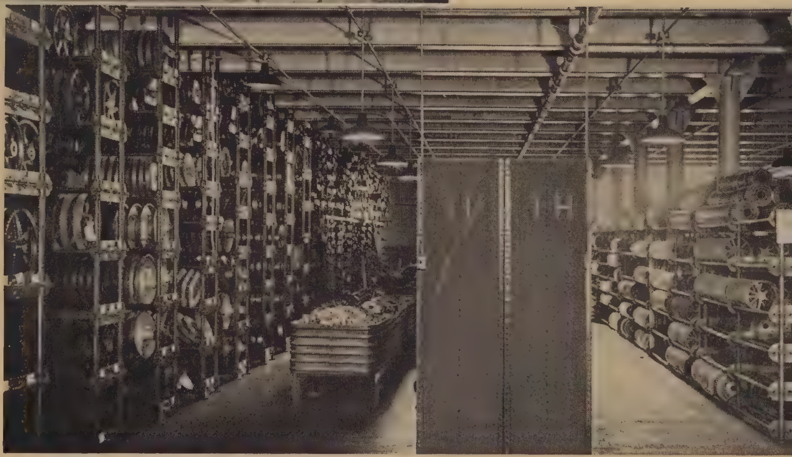
Different Stock Items are Carried

Sales and Service Men for Atlanta Territory

F. A. Ridenour C. H. Warren S. A. Stone Wilton Kilgore
C. H. Turner Walter M. Mitchell W. P. Ellis

Draper Corporation Warehouse at Atlanta
One Acre of Storage Area on Three Floors

At Left
Part of Atlanta
Stock of 8,800
Different Items



At Right
First Floor in
Atlanta Warehouse

Atlanta and Spartanburg Warehouses

The Draper warehouses in Atlanta and Spartanburg carry equally impressive quantities of parts and supplies adapted to the needs of their particular territories—10,200 different stock items at Spartanburg and 8,800 at Atlanta. In addition, the Hopedale warehouse stock is available for prompt shipment to North and South alike as needed.

The Spartanburg warehouse has two large floors with nearly 1 1/3 acres of storage space; the Atlanta warehouse occupies three floors having a total area of slightly over one acre.

The modern storage racks and bins in all three warehouses are specially arranged to facilitate the quick selection of parts called for on your order. Expert workmen promptly pack the parts selected and prepare them for shipment to you.

Sales and Service Men for Spartanburg Territory

L. C. Lockman   Clare H. Draper, Jr.   W. K. Child   R. W. Poole

Robert Brice   Thomas Henderson   C. L. Williams   Walter Brice

Part of Spartanburg Stock of 10,200 Different Items

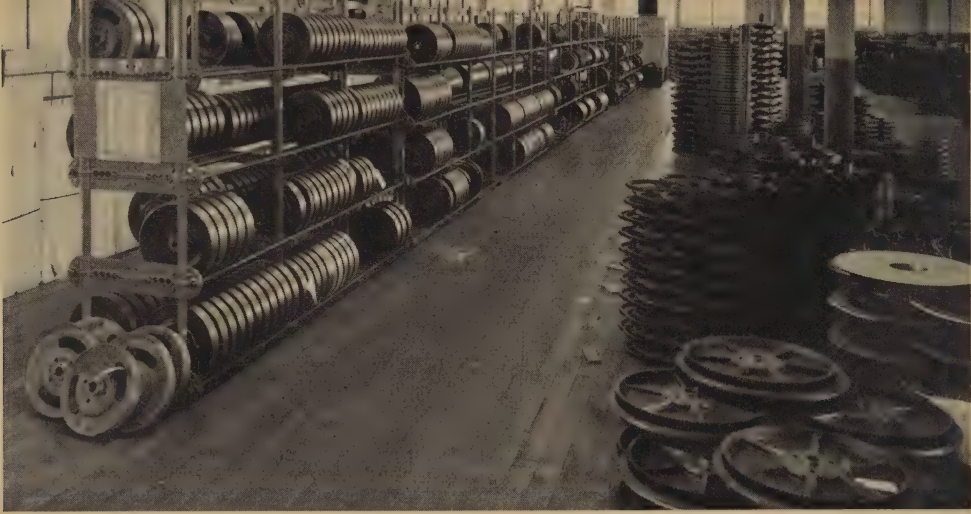
Spartanburg Office

Wherever your mill is located, the warehouse nearest you commonly makes shipment from stock within one day from receipt of your order, or within a few hours at your request.

The quantities kept on hand of each stock item are carefully planned to meet all your demands. Whenever the quantity of any item in any of the warehouses is reduced to three months expected sales, an additional three months supply is ordered from Hopedale or from the Draper plant at East Spartanburg.

The result is that several months supply of thousands of stock items are always on hand at each of the three Draper warehouses.

Draper Corporation Warehouse at Spartanburg
One and one-third Acres of Storage Area



Brake Wheels, Hand Wheels and other Parts at Spartanburg

Making Parts to Your Order---in a Hurry

Harness cams and change gears are examples of parts not carried in stock in large quantities, but which will be made to your order and shipped to you days sooner than you can get them anywhere else.

Harness cams are made only at the Hopedale plant. Here our experts, with access to records showing the exact construction of your looms, can determine the specifications of the cams you will need to duplicate your cloth sample.

Patterns for these cams are selected and the cams made, inspected and part shipment made within 24 to 48 hours of the time your order is received.

Or perhaps you need change gears in a hurry? Exactly duplicate patterns and equipment for most models are maintained at Hopedale and East Spartanburg. Part of your order will probably be shipped from stock today and the balance will be made up and shipped from the plant nearest you—again within 24 to 48 hours.

These huge reserve stocks of parts and supplies for your Draper looms are available only in Draper warehouses. Only Draper Corporation has the facilities to give you such quick service on the parts not carried in stock.

Why Accept Substitute Parts?

COTTON CHATS

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 343 MARCH 1941

Two New X Series Looms at the Greenville Show

One new model to be shown is of major importance to the textile industry.

It is a new loom, to be known as the X-2, for the same fabric range as the regular X Model.

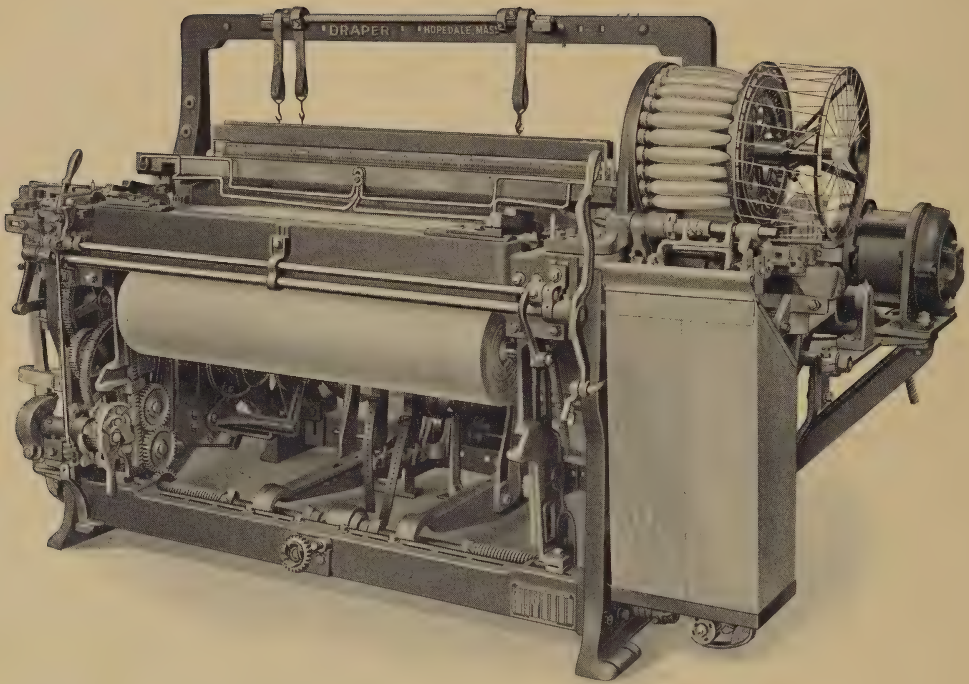
It was developed as a direct result of the impressive performance of the XD Model.

The other is the new XU Model duck loom for a range of heavy fabrics up to and including #6 hard duck.

Heavy Looms Needed for All Weaves

The XD Model Rayon Loom was first introduced less than two years ago. Its success was immediate. Its sales were almost unprecedented, 8466 having been sold in the short time it has been on the market.

It is acclaimed in the Rayon weaving industry as the best of the modern high speed looms. It has proven the



NEW X-2 MODEL COTTON LOOM

For Same Fabric Range as Regular X Model

value of heavier, stronger, more rigid looms for weaving both light and heavy fabrics.

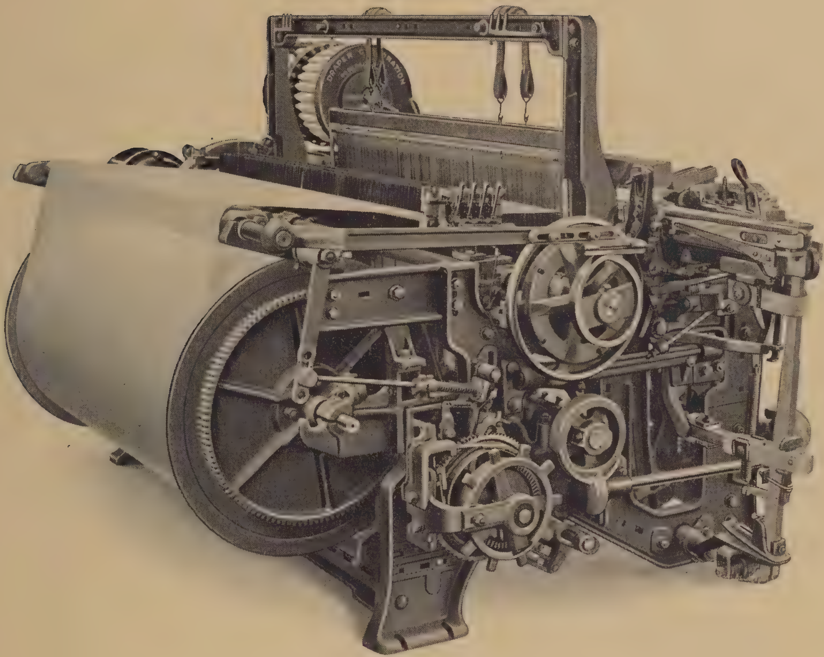
These heavier looms run faster, with higher efficiency. Their steadiness results in better cloth quality, with less fixing and fewer repairs.

The New X-2 Model

This new model takes full advantage of those very important principles which the XD Model has proven by two years of actual use.

The weight of the X-2 loom exceeds that of the regular X Model of the same width by nearly 200 pounds.

Strengthened parts include loomsides, breast beams and girts, plus application of the four-bolt hopper stand with wide foot.



X-2 MODEL IS HEAVIER, STRONGER, MORE RIGID

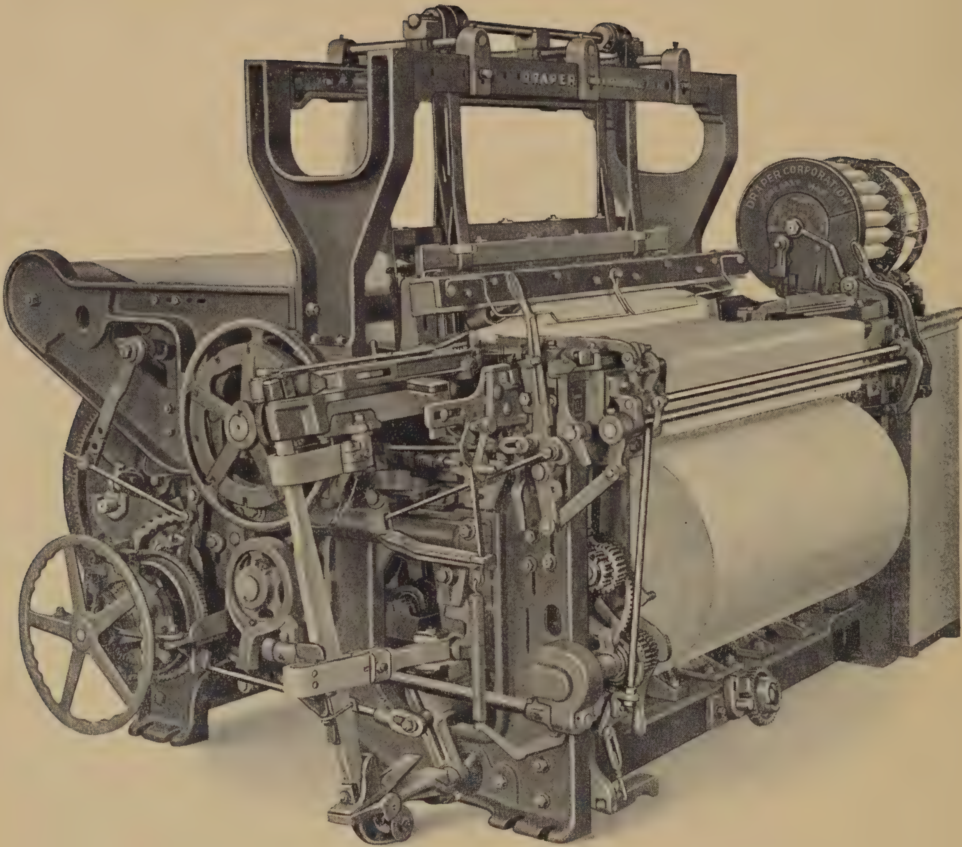
Better Quality Cloth at Lower Cost

With its new adjustable check and Patented Formed Shuttle box equipment, it provides a control of the shuttle never before achieved.

Let-off may be a strengthened Roper type, or Bartlett. All looms will be arranged to accommodate 26″ diameter warp beams.

These, with many other new features, combine to give you a loom which preliminary tests indicate will produce better cloth at higher speeds than regular X Models on similar fabrics.

If you weave any of the fabrics in the X Model range, you should see this new loom.



The XU Model Loom for Medium Ducks

This new model is a rugged loom, for a heavy job. Its massive loomsides and five heavy cross members are built into a single rigid structural unit. Weight and strength of operating parts are in keeping with the strength of the frame.

It is built to run 20% faster than previous duck looms.

One of the many improvements is a new arrangement of the take-up. The cloth is kept under proper tension by being pulled over the polished breast beam. Direction of movement of the take-up roll is reversed, permitting the cloth to be wrapped farther around the roll, to prevent slipping.

Another feature is large drag rolls located above the warp line to accommodate a 26″ diameter warp beam. A heavy depressor bar prevents any lifting strain on the warp stop motion.

COTTON CHATS

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 345 MAY 1941

Textile Show at Hopedale Features High Speed Weaving

Outstanding feature of the recent Textile Show at Greenville was our newest loom, the X-2 Model, running smoothly and steadily throughout the week at 225 picks per minute.

It was surrounded constantly by groups of wondering skeptics many of whom insisted upon counting the picks before they would believe that a loom could run so fast with so little fuss.

The X-2 is a high speed loom stepped up one step higher.

We were able to make the step-up with this model because of what we learned from the XD, the remarkable rayon loom whose sales went from 0 to 7000 in two years.

How fast will this new X-2 loom run?

We don't know. We are not prepared to say. The XD exceeded our expectations. We are aiming high with the

Draper Exhibit

X-2. It is a brand new loom. It was finished just in time for the show. It has not had the mill tests that our new products get before we put them on the market.

At Greenville it ran at 225 picks. It was on the job every day and every hour throughout the week. And we need not tell you that an exhibition hall without the usual humidity of a well-run weave room is not an ideal place for putting a loom to this severe test—especially a loom that had only just passed the limbering-up stage.

Now you are to have another chance to watch it in operation.

We have set up our complete Greenville exhibit in the show room at our plant in Hopedale.

You and all our other friends are invited to come to Hopedale and look the exhibit over at your leisure. There will be plenty of room, no crowd, ample time to see everything and courteous attendants to answer all your questions.

Besides this new X-2 Model, which is designed to weave the same wide range of fabrics as the X Model and

at Greenville

the old E, you will see all the late developments in high speed weaving:

Two new rugged models for Cotton weaves, the XP for wide and heavy goods and the XU for duck;

The XL for broad sheetings and XK for spun rayon;

The latest Rayon model, the XD so highly praised by weavers of rayon, improved by several new devices that are proving aids to the quality of its fabrics;

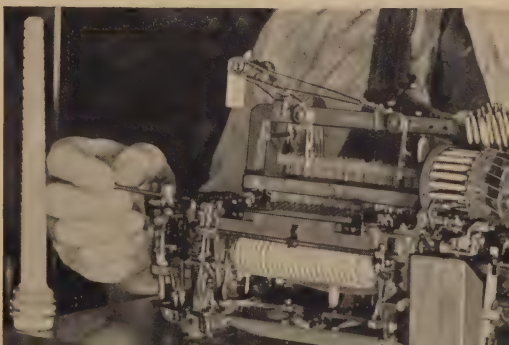
An interesting display of better repair parts that will help you select improved parts for your looms;

An attractive showing of Draper spindles and rings, loom temples, bobbins and shuttles.

There will be opportunity if you desire to go over our plant to see how modern looms and shuttles are made.

If you have time for a side trip to our bobbin plant at Beebe River, N. H., where you can see bobbins made in the Draper way, you will find it profitable and interesting.

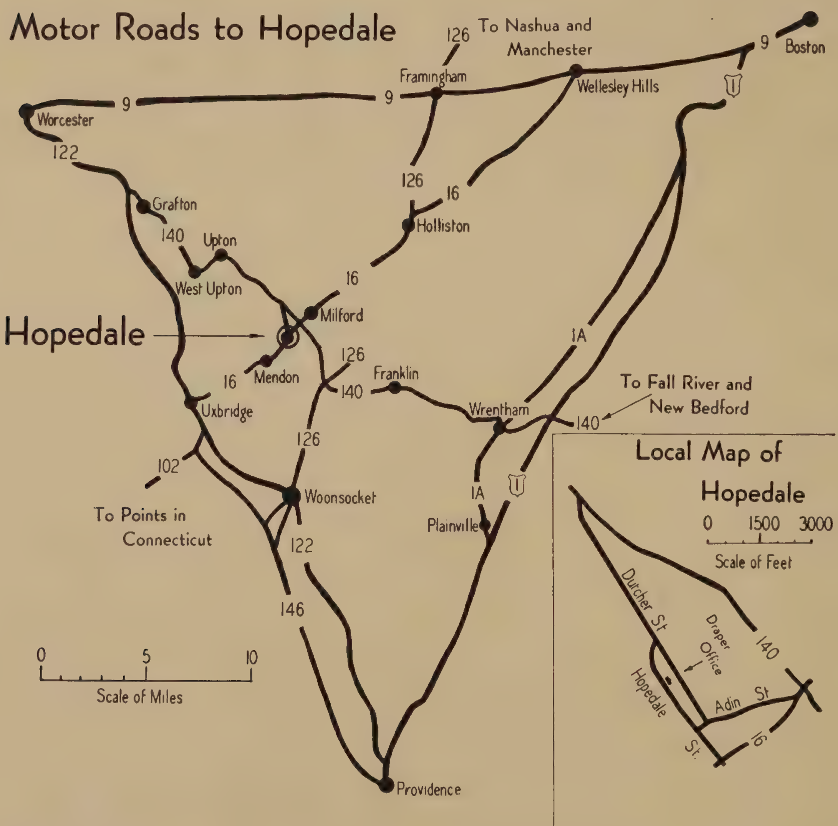
See the Midget Loom



To Get to Hopedale

Most New Englanders and many that come from other nearby states and eastern Canada will make the trip by motor. For their benefit we give a map of motor roads from Boston, Worcester and Providence to Hopedale.

Those who come from a greater distance by train to Boston, Providence or Worcester will be met on arrival in either city by a Draper Corporation car if we receive advance notice of their coming and time of arrival.



NOTE—Route 146—the Louis Quisset pike and Quaker highway to Uxbridge—ordinarily is a desirable route from Providence to Hopedale. During the present summer the pike is being widened. Until this work is completed, take one of the other routes from Providence.

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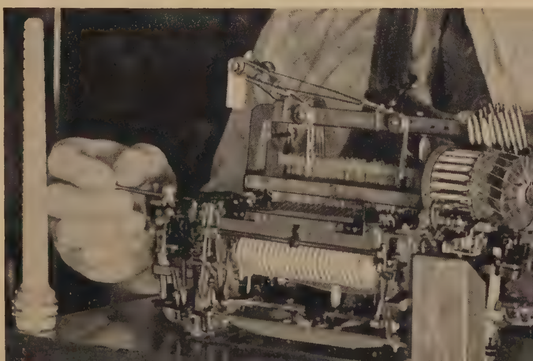

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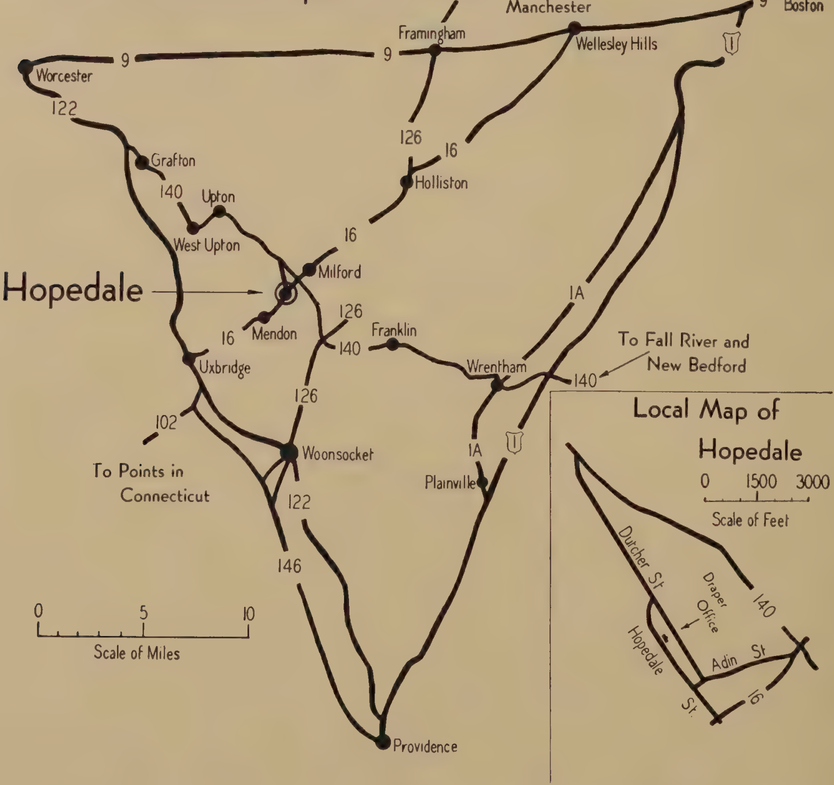

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DRAPER CORPORATION HOPEDALE MASS

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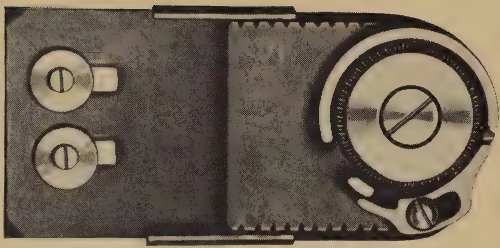
Draper Corporation Business 125 Years Old This Month

First Draper Shop in Hopedale 1841

Assembly and Erecting Shop 1941

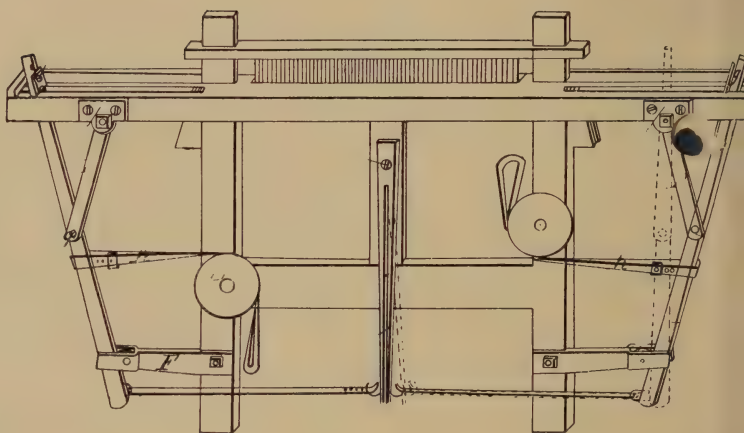


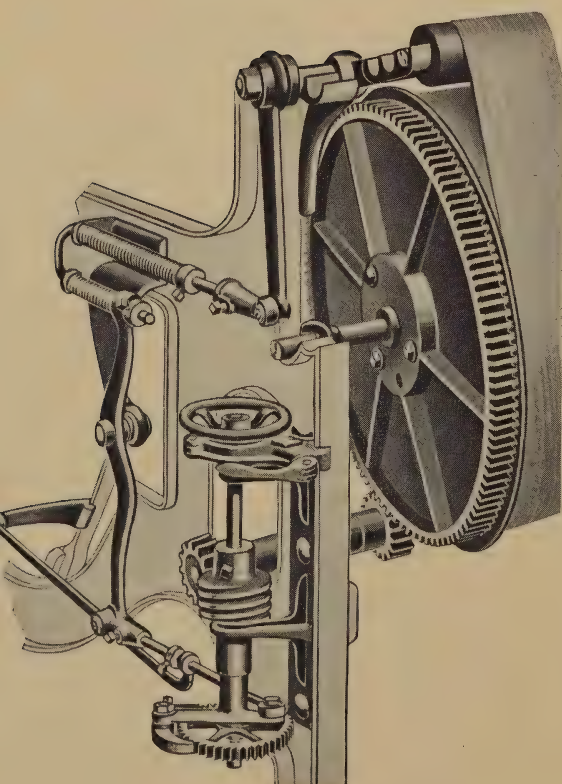
1816

Original "Self-Moving" Temple invented by Ira Draper in 1816 Enabling One Weaver to Run Two Looms instead of One.
Manufactured in Weston and Later in Boston. Sold in Large Quantities

1846

W. W. Dutcher Patent First Parallel Under-pick Shuttle Motion. Patent Covered Several Later Types Made in Hopedale and Widely Used for Many Years



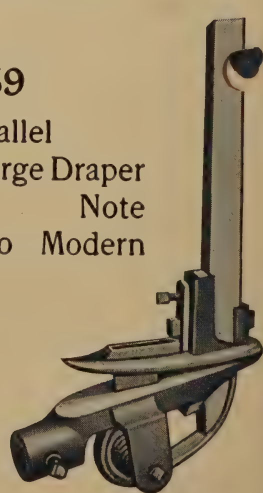


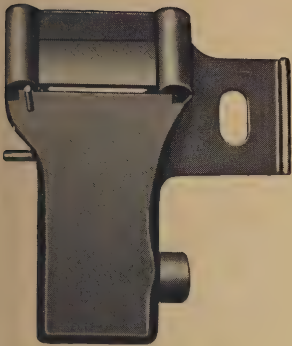
1857

Snell and Bartlett Let Off Another Original Draper Patent. The Modern Bartlett Let-off which is now Standard for Rayon Weaving is an Improved Design of this Same Type of Let-off with Certain Automatic Features Added.

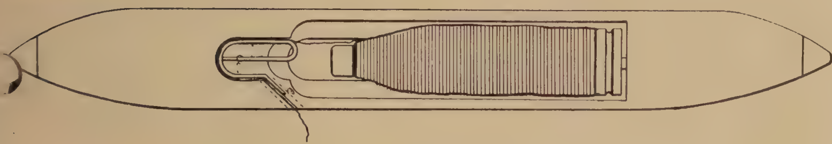
1859

Stearns Parallel Made by George Draper and Son. Note Similarity to Modern Parallels

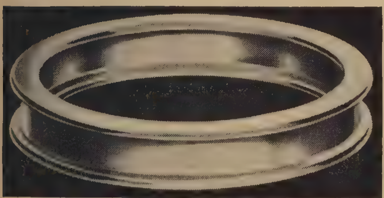




1863 Frog With Loose Steel
Invented by George Draper
First Made as an Attachment for Mason Looms and Later Used on Every Loom Built in This Country. By Decreasing the Movement Required of the Binder it Greatly Improved Boxing of the Shuttle.



1868 Metcalf Patent on the first practical self threading shuttle. Draper development of this patent played a large part in eliminating the "kiss of death" practice of threading the shuttle by sucking the filling through a hole in the side of the shuttle.



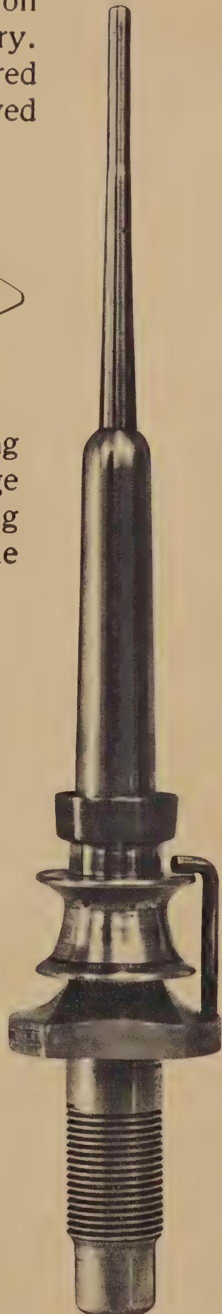
1869
Carroll Double Flange Ring
An Original Draper Design
Now Furnished By All Leading Ring Manufacturers.

The loom mechanisms shown on these pages are selected at random to illustrate the many valuable Draper contributions to the weaving industry during the last 125 years.

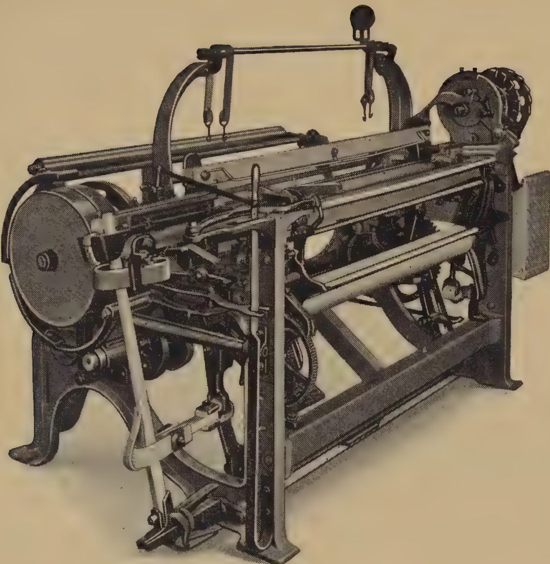
In the period before 1890, Draper inventions and products revolutionized other branches of the textile industry as well.

The Sawyer and Rabbeth types of Draper Spindles made Ring Spinning practical, by doubling spinning speeds. New or greatly improved Draper Warpers, Spoolers, Twisters and other machinery further reduced cotton manufacturing costs.

Then, beginning in the 1880's, most of our development work was concentrated on looms.



1878
Rabbeth
Spindle



1895

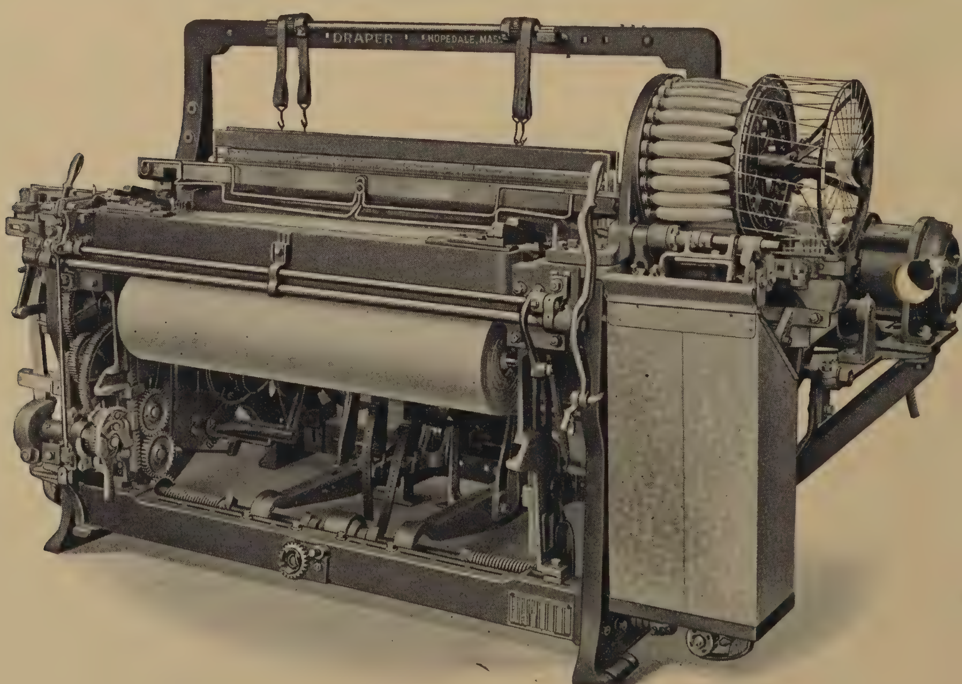
"A" Model Northrop Loom
The First Automatic Bobbin Changing Loom in the World

The loom shown was built in 1895 for Gaffney Mfg. Co. Gaffney SC, and restored to its original condition by Draper Corporation in 1941 for the Smithsonian Institution, Washington DC

It is a long step from the first A Model Northrop Loom of 1895 to the 1941 Model X-2, shown below.

Entirely new devices invented during this period include Feelers, Stafford Thread Cutters, Roper Let-off and many others. Every mechanism on the loom has been radically improved. Complete redesign of the various models introduced has added weight, strength and rigidity for higher speed and better cloth quality.

1941



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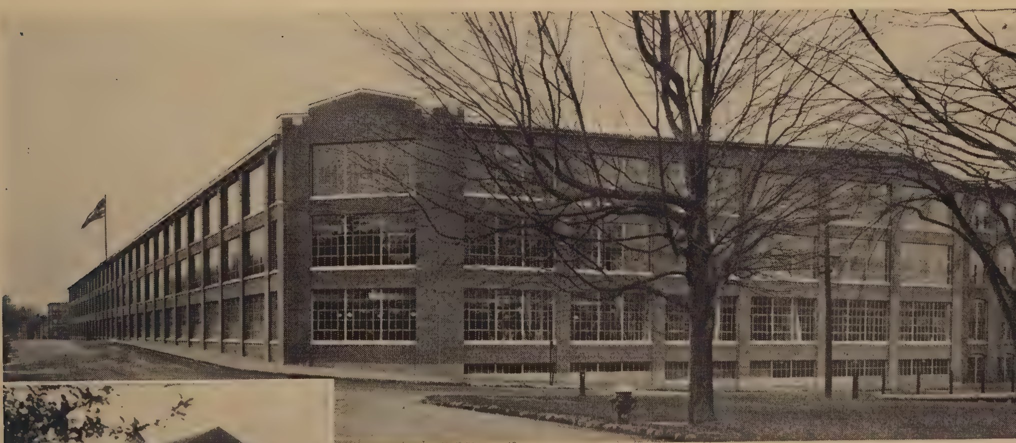
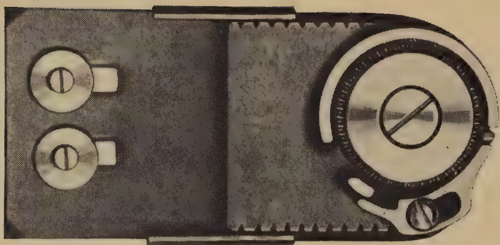
NUMBER 346 JUNE 1941

Draper Corporation Business 125 Years Old This Month



First Draper Shop in Hopedale 1841

Assembly and Erecting Shop 1941

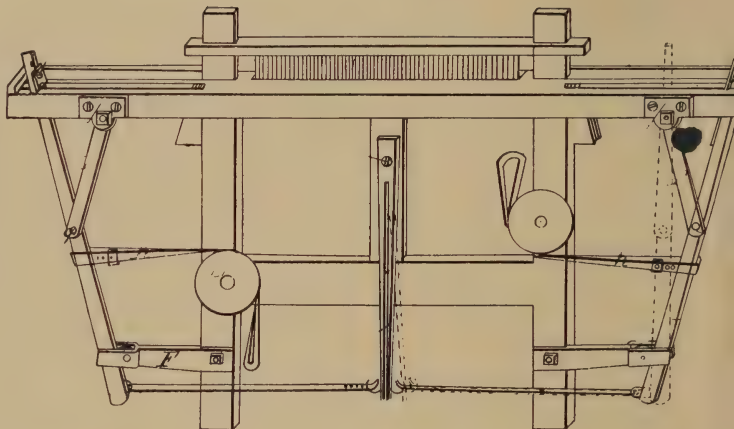


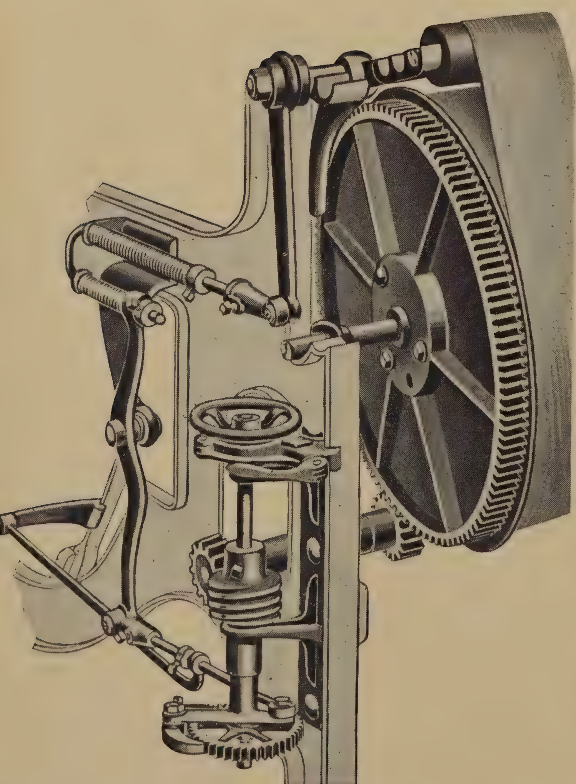
1816

Original "Self-Moving" Temple invented by Ira Draper in 1816 Enabling One Weaver to Run Two Looms instead of One.
Manufactured in Weston and Later in Boston. Sold in Large Quantities

1846

W. W. Dutcher Patent First Parallel Under-pick Shuttle Motion. Patent Covered Several Later Types Made in Hopedale and Widely Used for Many Years



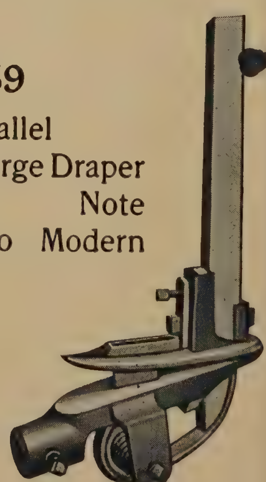


1857

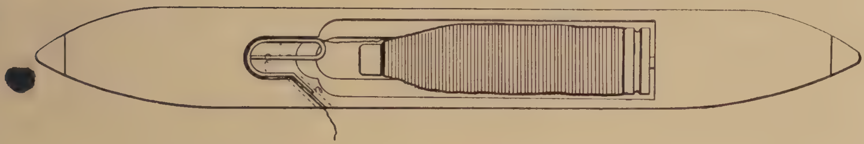
Snell and Bartlett Let Off Another Original Draper Patent. The Modern Bartlett Let-off which is now Standard for Rayon Weaving is an Improved Design of this Same Type of Let-off with Certain Automatic Features Added.

1859

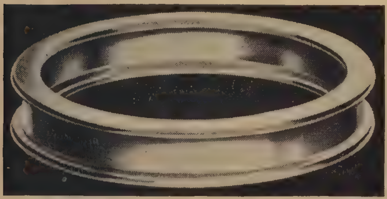
Stearns Parallel Made by George Draper and Son. Note Similarity to Modern Parallels



1863 Frog With Loose Steel
Invented by George Draper
First Made as an Attachment for Mason Looms and Later Used on Every Loom Built in This Country. By Decreasing the Movement Required of the Binder it Greatly Improved Boxing of the Shuttle.

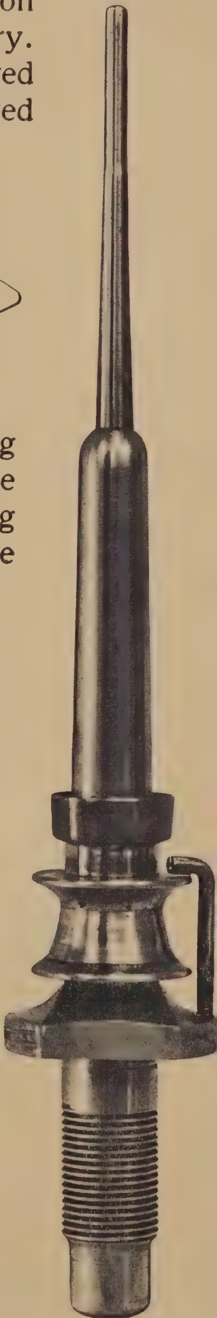


1868 Metcalf Patent on the first practical self threading shuttle. Draper development of this patent played a large part in eliminating the "kiss of death" practice of threading the shuttle by sucking the filling through a hole in the side of the shuttle.



1869

Carroll Double Flange Ring
An Original Draper Design
Now Furnished By All Leading Ring Manufacturers.



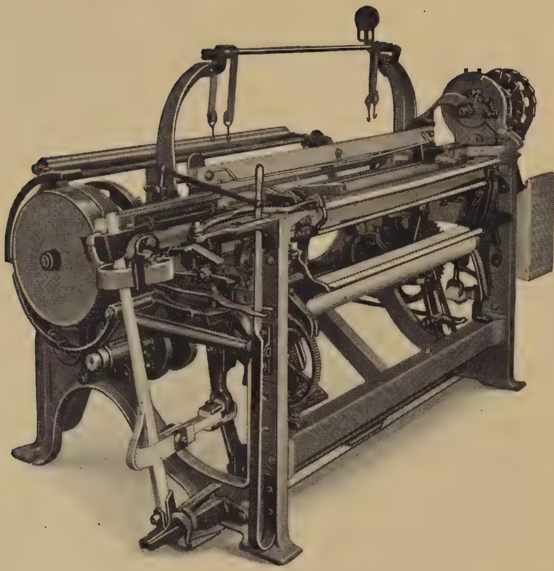
1878
Rabbeth
Spindle

The loom mechanisms shown on these pages are selected at random to illustrate the many valuable Draper contributions to the weaving industry during the last 125 years.

In the period before 1890, Draper inventions and products revolutionized other branches of the textile industry as well.

The Sawyer and Rabbeth types of Draper Spindles made Ring Spinning practical, by doubling spinning speeds. New or greatly improved Draper Warpers, Spoolers, Twisters and other machinery further reduced cotton manufacturing costs.

Then, beginning in the 1880's, most of our development work was concentrated on looms.



1895

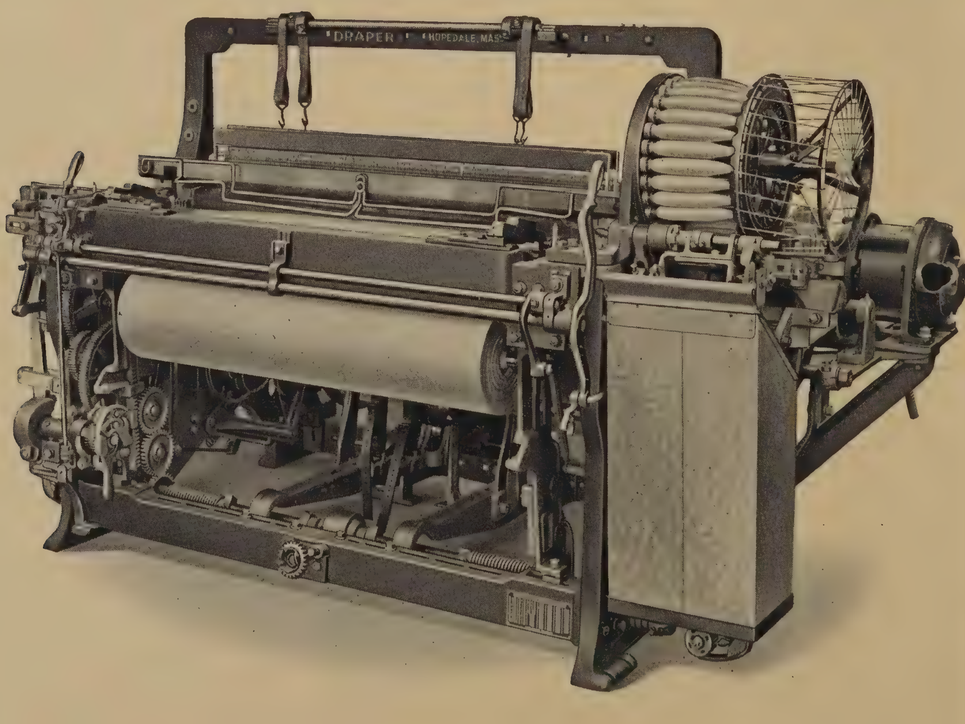
"A" Model Northrop Loom
The First Automatic Bobbin Changing Loom in the World

The loom shown was built in 1895 for Gaffney Mfg. Co. Gaffney SC, and restored to its original condition by Draper Corporation in 1941 for the Smithsonian Institution, Washington DC

It is a long step from the first A Model Northrop Loom of 1895 to the 1941 Model X-2, shown below.

Entirely new devices invented during this period include Feelers, Stafford Thread Cutters, Roper Let-off and many others. Every mechanism on the loom has been radically improved. Complete redesign of the various models introduced has added weight, strength and rigidity for higher speed and better cloth quality.

1941



COTTON CHATS
TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A
DRAPER CORPORATION HOPEDALE MASS
NUMBER 348 DECEMBER 1941

Some Aids to Weaving Premium Priced Fabrics

The Stafford Thread Cutter is one loom device you must have to weave quality fabrics.

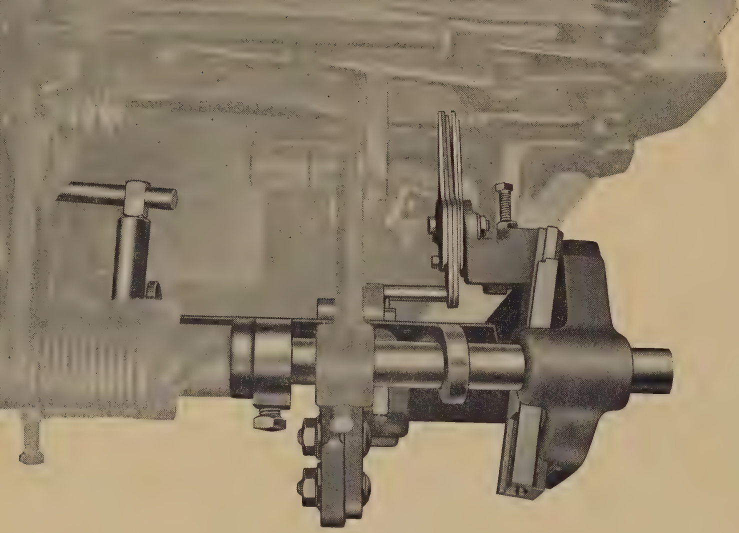
Some of the older types of our loom devices can be made to give passable results by careful loomfixing.

The Stafford Thread Cutter stands alone. In what it does, it has no predecessor, no present day rival.

You must have it to weave goods that will sell on a quality basis. It prevents troublesome weaving faults from trailing ends in the cloth by removing spent filling from both the shuttle eye and shuttle box. There is no other loom mechanism that will do this.

A Message to Loomfixers

We may add a further distinguishing feature of the Stafford Thread Cutter. Of all Draper loom mechanisms it comes nearest to being fool-proof. It is least likely to



Stafford
Thread
Cutter

Prevents
Trailing
Ends
in the
Cloth

get out of order. Once set properly, it will stay set unless actually jammed—by a loose bobbin, for example.

Of course you must replace the fibre guide when it becomes worn, and occasionally it will be necessary to tighten the upper knife carrier screw. Otherwise it is not likely to get out of order and should be let alone.

Look in the Shuttle Box

If the thread is not being cut properly, look for the cause in the shuttle box, not in the thread cutter.

See if the shuttle is being properly boxed. Does it come all the way in? Is it rebounding?

Make the necessary adjustments and usually it will be found that the thread cutter is working all right.

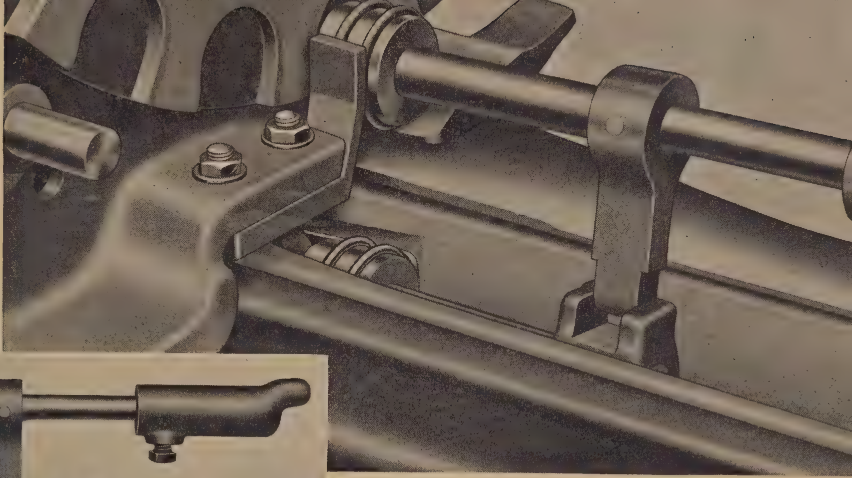
Working the other way around—on the thread cutter before making sure the shuttle is boxing properly—will introduce troubles hard to correct.

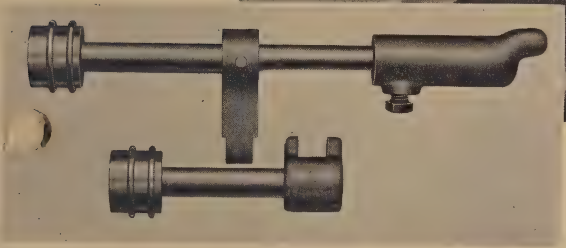
It has even led a sorely perplexed fixer to say he preferred the ancient and inadequate goose-neck cutter.

Proper Boxing of the Shuttle is a first essential of fixing automatic looms. Neglect this, and thread cutter or battery troubles are certain.

To assist the fixer we have a Shuttle Positioning gage. Each half has a steel duplicate of a bobbin butt. One is

Every
Fixer
Should
Have
One





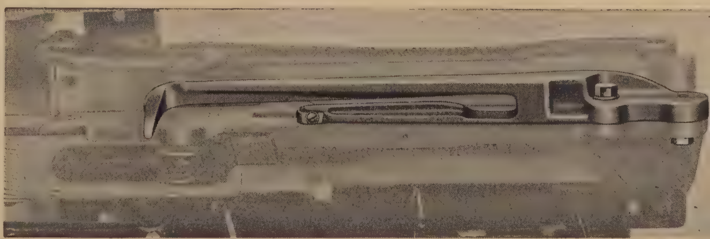
Shuttle Positioning Gage

placed in the low bobbin position in the battery, as for transfer; the other in the shuttle. The shuttle is then set in the box so that the milled tongue on the upper half of the gage can be swung through the milled groove in the lower half.

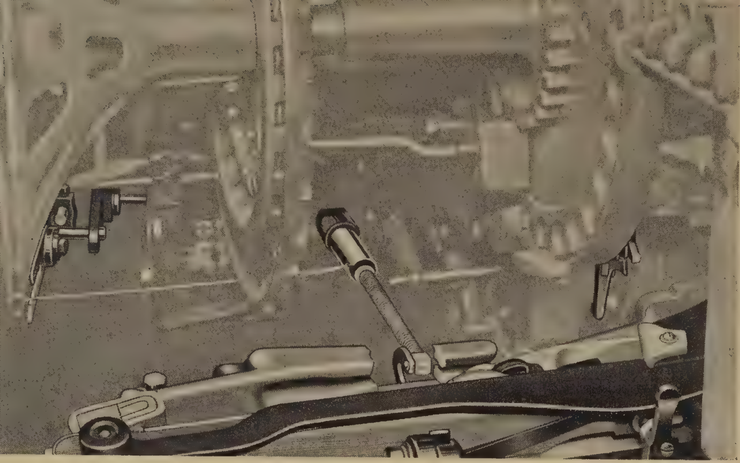
With the shuttle in this position, fit the hole in the picker and adjust the front box plate and binder.

Every fixer should have one of these gages. They are patented, and there is a special gage for each size of bobbin butt.

Our New Front Box Plate for use with the Stafford Thread Cutter allows the cut filling end still fastened to the selvage to be drawn out of the shuttle box at the level the end lies in the box, not by being cammed over the top of the plate.



Its shape brings the leather face of the box plate higher on the shuttle. The low leather on the old plate sometimes caused the shuttle to rise in the box.



Greatly
Reduces
Whipped-in
Ends

The Loose End Clearer

With trailing end troubles cured by the Stafford Thread Cutter, you are still faced with possible defects in the cloth caused by whipped-in loose ends.

One pick after a bobbin-transfer, two filling ends held by the selvage extend under the battery. When cut by the Temple, one hangs from the thread holder and the other has been freed to fall to the floor.

Air currents may draw these ends into the shuttle or upon the picker, to be carried into the cloth.

We have a new device specially designed to remove these loose ends before they can be carried in. So far it has worked well on a number of rayon fabrics on which these loose ends have caused trouble.

Our picture shows the three parts of this clearer:

A holder near the shuttle feeler to catch and hold the ends away from moving parts until cut by the temple;

A ribbed plunger upon which the ends fall;

A new cutter which cuts the end still fastened to the thread holder at the same time the Stafford cutter releases the end it is holding.

Driven by the lay, the plunger pushes the ends into and through a tube to fall in the bobbin can.

These new devices show how we are ever striving to help mills out of difficulties that develop from day to day in weave room operation.

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A

DRAPER CORPORATION HOPEDALE MASS

NUMBER 349 JANUARY 1942

What You May Expect from Draper Wartime Service

We are at war.

This is the solemn reality that must shape all our plans for the new year.

We must win the war.

To win it industry must play its part as bravely, as intelligently and as effectively as our army, our navy and our air forces.

There is a home-front and a battle-front. The job of the home-front is to supply the battle-front with the tools of warfare and all other things needed to maintain army morale and soldier comfort.

Most of us think of the needs of the battle-front as guns and ammunition, armament, tanks and airplanes. We read about these things in the papers.

In the quiet planning of our military headquarters, the quartermaster knows that before armament can be used he

must provide our fighting forces with clothing and shelter. Both make heavy calls upon our textile mills.

Even in the building of the real munitions of war, textile products of a hundred different kinds play their part today.

Our Job on the Home-Front

The textile industry is a war industry. It was in the last war. It is today. Modern mechanized warfare has increased the variety of fabrics it must supply.

As the tools of a war industry, looms must be kept running. Repair parts are a first essential. So also are such loom accessories as shuttles, bobbins and drop wires.

It is our business to supply these repair parts and accessories, and our patriotic duty to supply them with no delay. We have made all plans with that aim.

The government is backing us on raw materials for repair parts, and so far we have been able on many items to outdo our regular peace-time service. We expect to continue to do so.

Loom orders are in another class and are likely to suffer. We may be unable to keep promises made long ago on delivery.

The government is placing restrictions on the use of practically every metal needed in building our looms. Some of them can be used only on loom orders approved by Washington as being in line with the defense program.

It is likely, therefore, that the fate of any loom order will depend upon the special needs of the mill and its ability to secure necessary priority rating.

We are accepting these restrictions as part of our duty on the home-front to keep supplies moving up to the battle-front. We trust our customers will do the same.

Helping the War Program

But there is another angle to this home-front job.

Those who are planning our country's war strategy have sounded a call for all who are equipped, or who can be equipped to build munitions, to take some part in the production of armament and other battle-front supplies.

We are devoting a large part of our manufacturing facilities to building machine tools for wartime needs, to the making of much-needed battle-front equipment and to helpful sub-contract work for other manufacturers.

We expect to take on other products as called for by the government. Just now we are actively engaged in negotiating a large ordnance contract.

Our help has been working longer hours for several months, and to take care of this necessary new output we are making a large addition to our shops.

Many of our most skilled mechanics will be placed on this new work. Our shop school is preparing others.

This is the other half, and a very important part, of our home-front job.

Draper Men at the Front

All this means that our workers are busy and that we have present and future need for many more.

But the army needs men as well as munitions.

Our fighting forces must be increased as fast as men can be trained. Enlistments and the draft bring a drain upon our workers, sometimes even our munitions workers.

Already 123 recent Draper employes are in service, in the army, the navy, the marines, the air corps and coast guard. Two were fliers in the specially trained air corps when Japan made her villainous attack.

We are proud of these young men and of their spirit in responding to our country's call.

Draper Men in War Service

ARMY

Capt. John S. Honey
1st Lt. A. W. Kilgore (A)
Lt. Charles Entwistle
Alfred F. Alves
Joseph M. Alves
Joseph P. Alves
William Anderson (E)
Donald H. Baer
Robert H. Barnett (E)
Robert Benson
Sgt. Dona Bouchard
Alfred Bresciani
Irving Brown
J. F. Burgess (R)
Dante J. Caizzi
Philip Callery
William Campbell
Corp. Wm. J. Caufield, Jr.
Frank J. Comproni (B)
DeFoix Condrey (E)
Henry Conley
Sgt. Paul Cox
Adam Crescenzi
Horace O. Creasia
Philip Delasio
Bento Diaz
Arthur L. Dion
Sgt. Dom. DiCrescentis
Sgt. Wm. DiCrescentis
Vincent Domestico
John J. Doyle
John Driscoll
Sterling W. Dukes (A)
Harold Dunbar
Philip Ferraro
Corp. Francis Fitzpatrick
William J. Gaffney
Philip C. Gray (B)
Corp. Joseph Grillo
James Guglielmi
John E. Harris (E)
Edward C. Hodgson (B)
John L. Howard
Alphonso Iadarola

ARMY

Sgt. William Jacques
Corp. Charles Joslin
Donald Kirby
Aaron Lamar (A)
C. Howard Lapworth
Francis Larson
Carl Lindfelt
Jesse Long (E)
Sgt. Fred Luby
Francis Magee
Roger L. Martin
Justino Martins
Donald MacLean
J. Wm. McWhirter (E)
Fred Mears
Eugene J. Metevier, Jr. (B)
Corp. Melville Mosher
Stanley D. Olmstead
Alex Oneschuk
James Onistzuk
Willard C. Pickel (B)
Thomas Pomponio
Raymond W. Samples (A)
Michael Sanicandro
Ivan J. Saunders (B)
Alfred E. Slack
Corp. John R. Smart
Corp. Jacob Sniderman
Fred C. Stead
Harry A. Straw (B)
Corp. P. A. Swofford (E)
John Teixeira
Stephan N. Tosches
A. Hubert Turner
John Turner, Jr.
Russell D. Wade
William J. Wallace
Garfield Wellington (B)
Ralph Wellington (B)
William C. White, Jr.
John Rochie Wilder (S)
Theodore F. Wilfore (B)

COAST GUARD

Louis Ferrari

AIR CORPS

1st Lt. Robinson Billings
1st Lt. Donald Marshall (S)
Winfield Bell
Douglas D'Orsay
Wilfred E. D'Orsay
Thomas Colette Duntley
George Falconi
Warric R. Ferguson (A)
Joseph Santacroce
John W. Wilkins (E)

NAVY

Burton J. Allen (B)
Francis Alves
Seaman John Barr
Ronald Bradford
Henrique Cadiera
Douglas P. Clark
Raymond Cook
Joseph Cyr
Eben Draper
Raymond Duncan
Robert Hanley
Philip Johnson
Earl A. Moore
Francis T. Mullin
Frank R. Parker (E)
Joseph Racine
Forrest Sears
Joaquim Silva
Ferdinand Spadoni
Melvin C. Streeter
Herbert Vendetti

MARINES

Louis Ferraro
Raymond Gaffney
Richard Knight
Donald Washburn

ENGLISH AMBULANCE CORPS

Robert Draper

Note: A—Atlanta; B—Beebe River; E—East Spartanburg; R—Roadmen; S—Spartanburg. Those unmarked are from our Hopedale Plant.

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A

DRAPER CORPORATION HOPEDALE MASS

NUMBER 350 MARCH 1942

Peace Time Looms May Become War Time Looms

Those looms in your weave room that were built for peace time products can be changed over to looms for war contracts.

The textile industry has done a splendid war time job so far; but as our armed forces increase and their needs multiply, we face a further change to a war basis.

It looks, in fact, as if our Government is about to require that the larger part of the looms of our country shall fall in line on its program for war fabrics.

You want your looms to fit into that program—and there is no serious difficulty.

Somewhere down the long list of needed fabrics is the one you can make.

Perhaps your looms will take it without any change of equipment. It may be they will need some new device or modification of one of the present mechanisms. That will be easy. We have that new device or the parts you

need to change a mechanism. Washington will smooth the way for us to get them to you.

The various ducks are hard for the average mill to weave and call for the greatest changes on the usual run of looms. Yet shelter tent duck is being successfully made on E Model looms.

Weaving Shelter Tent Duck

The army needs a vast amount of shelter tent duck. This is being woven now on our E, X, X-2, K and XK Model looms. To weave it, your looms should have the following equipment—some of which you may now have:

Roll & Shaft harness motion.

Drag Rolls and Heavy Lay.

Midget Feeler and Stafford Thread Cutter.

Nutting Bar Take-up—advisable but not essential.

With 8″ bobbin and small section shuttle, change to 8 3/4″ bobbin with shuttle for larger diameter bobbin.

It will be desirable, also, to change to a beam head of as large diameter as the loom will take.

The looms must be in good condition, with all worn parts replaced, especially in the take-up and let-off.

The table on the opposite page shows the capacity of all our loom models for the various kinds of duck.

Big Contracts on Other War Time Fabrics

Draper looms of all models—including rayon looms—are busy everywhere on war-time fabrics. Most of them required few alterations. Few needed as many changes as duck-weaving demands.

There are big jobs now open for millions of yards of Nylon parachute cloth. Your XD and XK rayon looms are ready for this fabric without any changes.

The advice and help of our salesmen and service men are free to mills that want to take on war fabrics.

Capacity of Draper Looms to Weave "Duck"

All looms being properly equipped with Drag Rolls, Heavy Lays, etc.

Draper Model	Heaviest recommended Fabric in 30″—40″ Range	Heaviest recommended Fabric in 60″ Range
E	Shelter Tent Duck 60 x 60 20/2 W & F 8-1/4 oz 40″ loom and under	Over 40″ loom Not suitable for even lightest duck
X	Same as E but loom will run faster	
X-2	Same as X & E but loom will run faster	
K	Shelter Tent Duck 60 x 60 20/2 W & F 8-1/4 oz	
XK	Same as X	
Mod D	#8 Duck is questionable 40″ loom #9 Duck probably limit 40″ loom	#10 Duck 64″ loom
P		
XP	#7 Duck 40″ loom	#8 Duck 64″ loom
XU	#6 Duck 36″ loom	#7 Duck (Probably) 64″ loom being built
R	#4 Duck 46″ loom	#6 Duck in 60″ width #8 Duck in 76″ width
O	Built in widths from 72″ to 110″. Extra heavy Wagon Cover Duck (80 x 30 13's F 7-1/2's W) (limit in 76″ width)	

Model XD, Rayon loom, and Models L & XL, Sheeting looms, are not adapted for Duck.

War Time Substitutes

The war program demands substitutes. To arm our fighters, the government needs raw materials, especially brass and the copper and zinc from which brass is made.

It disturbs us to offer you "substitutes." We have been knocking them for years. But there are substitutes and substitutes.

Substitute loom repair parts offered you as "just as good" are not just as good as parts supplied by your loom-builders, which are made to the same measurements and finished on the same jigs and machines as the parts that came on the looms.

The substitutes we offer you—accurately made but of a different material—are not "just as good."

Seeking Better Substitute Materials

They are a war-time product for which we offer no apology. We will improve them if and when we can.

Our research and development engineers are on the job of trying to find better war-time substitutes in raw materials. They are not finding it an easy job with the restrictions war-time needs impose.

Meanwhile we ask your patience and co-operation in the use of the new "substitutes" due to the necessity of conserving metals needed to win the war.

Remember Pearl Harbor! Our first job is to lick Hitler and the Japs.

Many fine tributes to Robert W. Poole have come to us from Southern textile men since his death in December. "Bob" had worked for Draper Corporation 41 years, as a service man for 27. Well qualified for his work and ever pleasing in his contacts, he will be missed by mill men and the company he served so faithfully.

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A

DRAPER CORPORATION HOPEDALE MASS

NUMBER 351 APRIL 1942

GEORGE RUSSELL GOFF

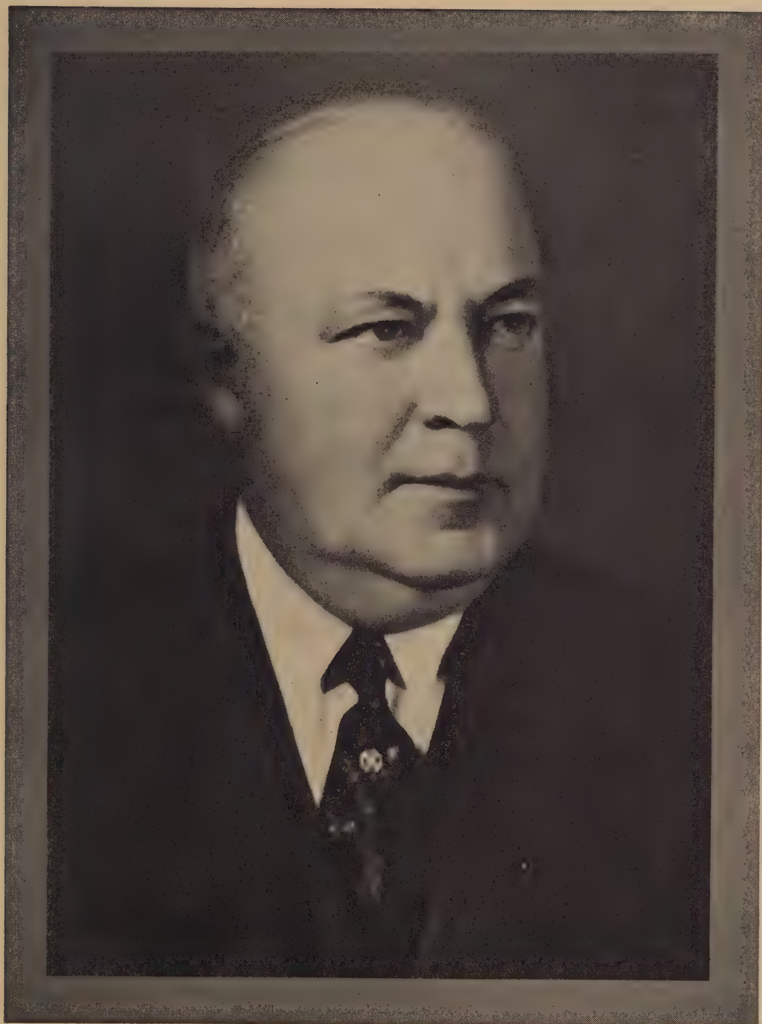
Mr. G. Russell Goff, our beloved fellow member, died March 14, 1942.

Mr. Goff had been associated with Draper Corporation and its predecessors during a period of more than forty years, and in that long service he had held the offices of Office Manager, Director, Purchasing Agent, Assistant Treasurer, and Treasurer, which office he held at the time of his death.

He was especially devoted to the business with which his life was so closely interwoven and to the advancement of all the interests in the Town of Hopedale.

He held the highest regard and esteem of his associates and townspeople who, by his death, have suffered an irreparable loss and experienced a lasting sorrow.

At a meeting of the Directors of Draper Corporation it was unanimously voted that the above Testimonial be inscribed on the records of the Directors of the Corporation and that a copy be sent to Mrs. Goff and the family.



George Russell Goff

GEORGE RUSSELL GOFF

A native of Providence, R. I., where he was born on July 6, 1881, Mr. Goff was attending Bryant & Stratton school in that city when a call came for an office clerk for Draper Company. Although he had not completed his course of study, the school sent him to Hopedale with a good recommendation. He was hired and began work as a bookkeeper in August, 1900. His industry and ability won him in due time the position of office manager.

He was chosen a Director of Draper Corporation and made purchasing agent in 1923. Six years later he became assistant treasurer, and treasurer in 1938.

Mr. Goff was a prodigious worker and most faithful and efficient executive.

He was treasurer of the Milford Water Company for many years and a director of the Home National bank of Milford. He took a prominent part in the community life of Hopedale and its town affairs. He was at the time of his death chairman of the road commissioners, member of the school committee and the secretary of the finance committee; was vice president of the Milford hospital, secretary-treasurer of the Hopedale Village cemetery and president of Hopedale Community House, in which he took a very keen interest.

He was a member of the Pine Street Baptist church of Milford, which he served in many capacities, having been church treasurer and Sunday school superintendent.

For many years he served as secretary of the Goff Gathering association, one of the country's oldest and largest family organizations.

Fraternally he was a Mason and a Pythian and member of Aleppo Temple of the Mystic Shrine of Boston.

He is survived by his widow, Mrs. Lelia (Hancock) Goff, two sons, a daughter, two grandchildren, a brother and a sister.

COTTON CHATS

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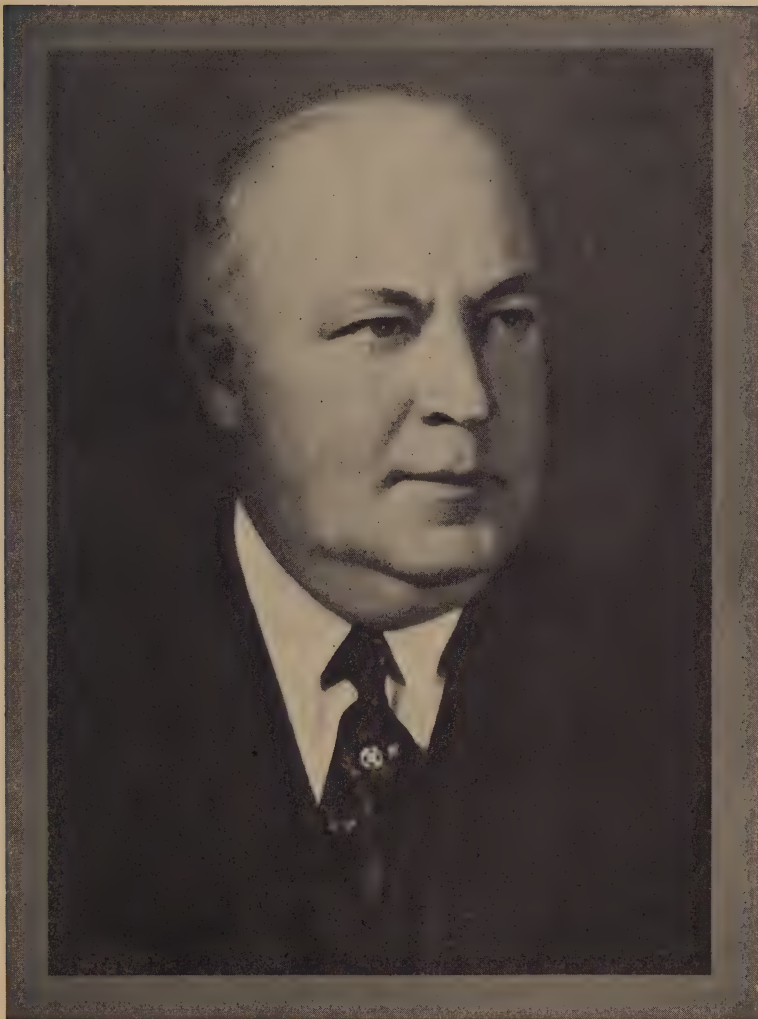

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He is survived by his widow, Mrs. Lelia (Hancock) Goff, two sons, a daughter, two grandchildren, a brother and a sister.

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A

DRAPER CORPORATION HOPEDALE MASS

NUMBER 352 MAY 1942

WITH SUPPLEMENT

Dogwood and Maple Scarcity Hits Shuttles and Bobbins

There is a threatened scarcity of dogwood and maple that may affect your orders for shuttles and bobbins.

This is not because of Nazi subs off the Atlantic coast nor the Jap conquest of the Dutch East Indies. It is simply a case of an excessive demand and a diminishing supply.

The situation became so acute several weeks ago we advised the mills to accept some persimmon shuttles on each order. It has eased up a little since then. We are now temporarily withholding that advice and are filling orders for dogwood shuttles as usual.

Both dogwood and maple are native woods. Dogwood has come from the South, maple from the hills of Vermont.

For years we have been told the dogwood supply was practically exhausted, but the blocks continued to come.

During 1941 and so far this year we have received more dogwood blocks than in any other like period; but

the demand for shuttles has exceeded this substantial increase in shuttle block shipments.

Now the threatened depletion of supply has become actual. Besides the increased difficulty in getting out the blocks from the remaining scattered sources, forest labor is being drawn away to easier and more lucrative jobs in wartime industries.

A Wood from Africa

We have not been idle in the face of this potential shortage of dogwood.

In addition to an all-out effort in obtaining our regular supply of dogwood shuttle blocks, we have scoured South America and other parts of the world in search of a suitable substitute. We have found a wood in Africa that looks very interesting and trial lots are now being arranged for.

Impregnation of Persimmon

Our laboratory has been studying the impregnation of persimmon with various chemical ingredients with some degree of success. We have been working with the United States Department of Agriculture in an effort to develop a satisfactory substitute.

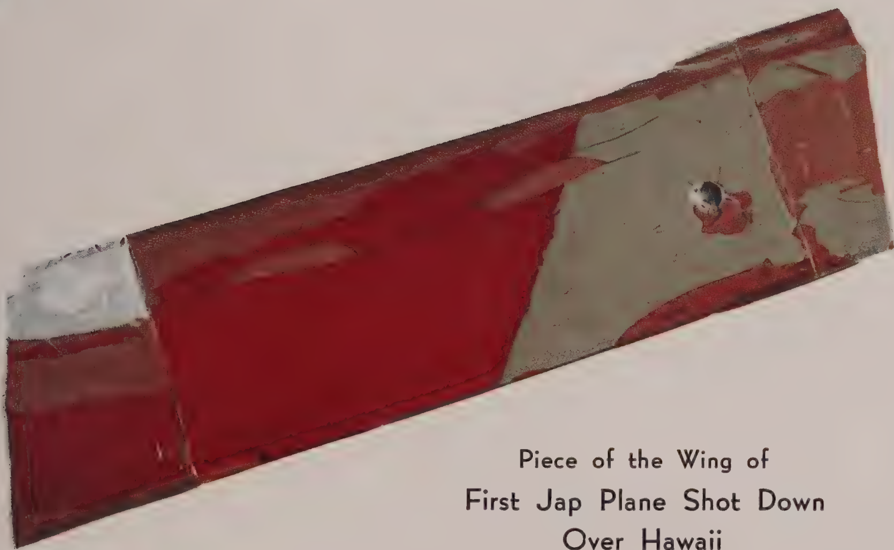
It takes so long to dry a shuttle block and properly season it to give the maximum life that of course there is a tremendous lag between any of our experiments and getting into actual production on anything that appears to be successful.

When Persimmon Shuttles Were the Rule

Up to 25 years ago all but a very few mills used persimmon shuttles. We recall now the effort we put in tabulating the life of shuttles and our arguments with mill buyers in trying to persuade them to pay a higher first

Jap Plane over Hawaii

International News Photo



Piece of the Wing of

First Jap Plane Shot Down

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Sent by Draper Employee now in Navy

Ferdinand Spadoni F P

U S Navy

Supplement to Cotton Chats

May 1942

U.S. NAVAL AIR STATION
KANEHOE BAY
OAHU, T.H.

U.S. NAVAL AIR STATION
ROOSEVELT BASE
TERMINAL ISLAND, CALIFORNIA

Jun. 12 1942

Dear Sirs

Thanks a million for your kindness for sending me that most welcoming check. It sure hit the spot, and gave me enough pepper + ginger to knock down so many Japs for each one of those dollars. And when I say "so many," I mean plenty. It will be like taking candy away from a baby. And will be dedicated for the Draper Corporation.

Enclosed is a piece of the first Japanese fighter plane we shot down at this Air Base. Its a piece of the rising sun. Be patient and I'll send enough pieces from each different plane shot down, to build one.

And again thank you for your kindness.

Sincerely
Spadoni S. P.
United States Navy

cost to get dogwood shuttles. The change came very slowly at first. Some mills continue to use persimmon shuttles with good results. One of the largest mills in the South orders nothing but persimmon shuttles and say their records show that for them they are decidedly more economical than dogwood.

If you have both high speed and older model looms, reserve your dogwood shuttles for your high speed looms. On your slower models, persimmon shuttles will give good service if the fixing is right.

Good Fixing Will Help

See that the pick is not too harsh—just enough to get the shuttle out of the shed in time.

Use only good reeds and see that they are correctly lined up.

Have your shuttle boxes and shuttle check set for proper boxing of the shuttle. Our shuttle positioning gage will prove a great help.

Check your pickers and picker sticks.

Have your battery transfer in time and make sure bobbins are not working loose in the battery.

Check your filling motion, feeler and the shuttle feeler to insure against interference with the shuttle.

In short see that your looms are put in condition to give the shuttles every chance for long service. The danger lies in having any loom condition that may lead to cracking or splintering the shuttle.

Bobbins Too

The bobbin block situation is very much like that in shuttles. Great stands of maple that covered New England in days gone by are gone. The maple that is left is in the more inaccessible spots, expensive to log. It can be brought out only at higher cost for transportation.

Here again the lure of the easier and better paying wartime jobs has so reduced the number of lumber jacks that one logging firm after another has succumbed to the twin scarcities—of stock and help.

We are setting up our own lumbering organization. We are going after that maple and believe we can assure you that our lack of maple stock will be only temporary.

Meanwhile there are birch bobbins. We know some mills prefer them. We believe there is some authority for the statement that they are less likely to warp.

We feel that experience shows that maple bobbins stand hard usage better—and propose to do our best to restore the situation so you can make your own choice.

Save Your Bobbins

Meanwhile, for the duration of the shortage, it is up to each mill to save their bobbins, to keep them in good condition.

Good fixing will help. Supervision in weave room and spinning room, with periodical bobbin inspections, will do more.

Set bobbin cans so bobbins will not be thrown out on the floor. Have any that do fall picked up. Replace bad bobbin cans.

Guard against too great wear on the bobbin tips. Improper boxing of the shuttle, incorrect setting for the transfer or a poorly set bobbin disc may be the cause.

You may have to accept substitute materials in your shuttles and bobbins.

We are doing our part by systematic search for new supplies and research in improving materials available.

Do yours by intelligent and periodical checking of your loomfixing. Give your shuttles and bobbins a chance.

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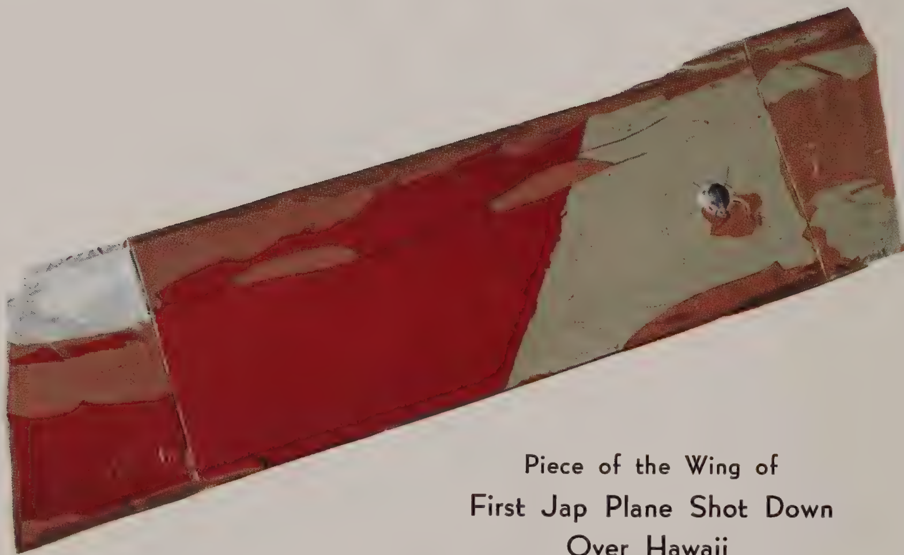

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Mechanics Don't Get Medals But Theirs is a Victory Job

Keeping the ranks full and the morale high behind the work benches and machines of war industries is vital to victory by our armed forces on the battlefront.

But though the overalls of the mechanic may rank with the khaki of our fighting forces, the wearers of the overalls get no distinguished service medals; and in its shop recruiting, industry cannot offer the appeal of high adventure.

For industry must recruit if it is to man the work benches and machines that must produce the armament and supplies Washington and our allies so urgently need.

The army drafts its man-power. Industry can only invite or bid. And it has bid the skilled labor supply nearly dry. Like the army it must now train the men it recruits.

In our own shops, with more than 5% of our entire body of workmen now at battlefronts on three continents,

Draper Corporation Apprentice School

Above
Instructor Hullah and his Students

At Left
Corner of Class Room and School Shop

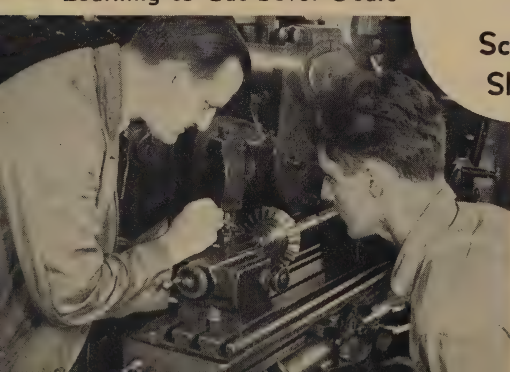
One Week in Every Three in Class Room

Individual Instruction

Blackboard Talks

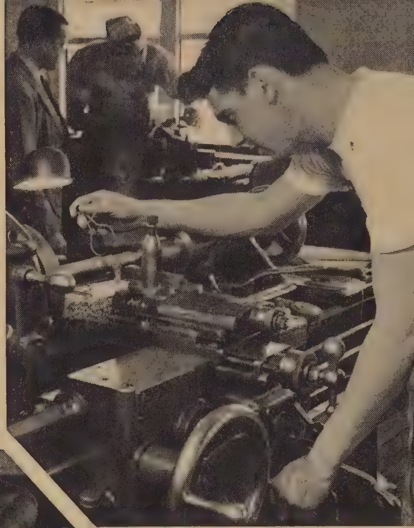
Two Weeks in Three in School Shop

Learning to Cut Bevel Gears



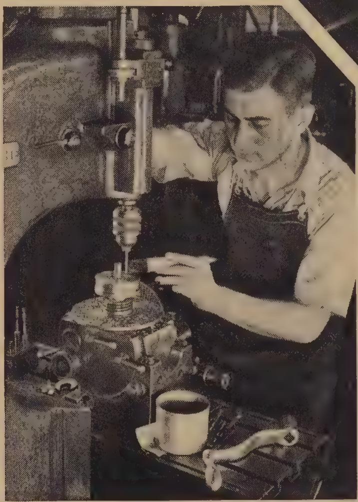
Trouble Shooting

Using Micrometer



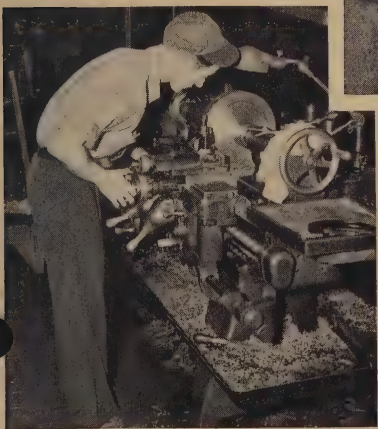
Working on Lathe

Surface Grinding



At Left
Use of Index Head on
Vertical Milling Machine

Below
Laying out Jig Parts



At Left and Below

Under-Grads
Help Build
Wartime
Machine Tools

or training for these fronts, we are fortunate that our shop managers foresaw this impending shortage and began more than two years ago to prepare to meet it.

Making Toolmakers and Machine Tool Designers

Plans were made for a school to turn out competent toolmakers and machine tool designers in a three years course of classroom study and apprenticeship in a school shop properly equipped.

It was to make all-around mechanics, not simply to fit men for a particular job on a given machine.

The school opened January 6, 1941. Sons of Draper workers and high school graduates were given preference.

The students work a five-day 40-hour week, receive good pay with a raise every six months and are furnished all tools free. They spend one week in every three in the classroom and two on machines in the school shop.

In school the boys study mechanical drawing, shop mathematics and the theory and use of machine tools. Accuracy in measuring and gaging is emphasized.

In the shop they work on actual jobs, making small tools and shop products. Output is sent to the proper shop department for the same rigid inspection that all our regular output receives.

Now On War Jobs

Such was the plan—and it was followed for a year.

But Pearl Harbor changed everything.

The school is now loaning its undergrads to speed up war production in our main shops.

Students are not so loaned until well grounded in fundamentals; but once thus prepared, they are allowed to specialize and take jobs as soon as competent.

Giving up their chance for a well-rounded training in mechanics is the unspectacular sacrifice these boys are proudly making in our country's cause.

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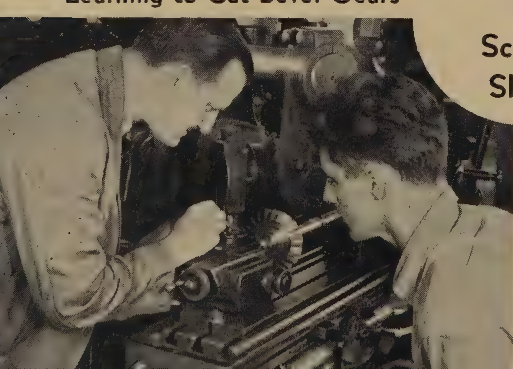

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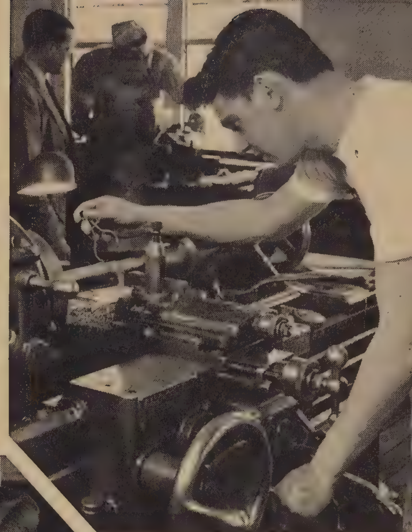

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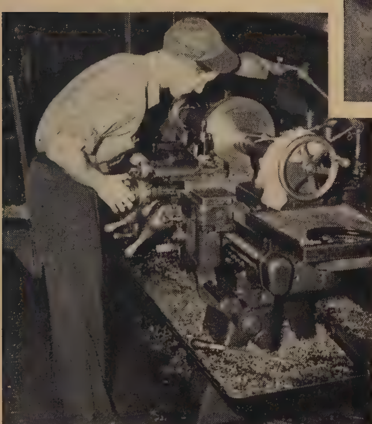

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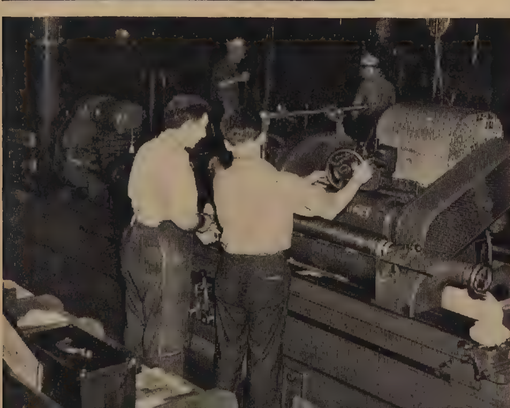

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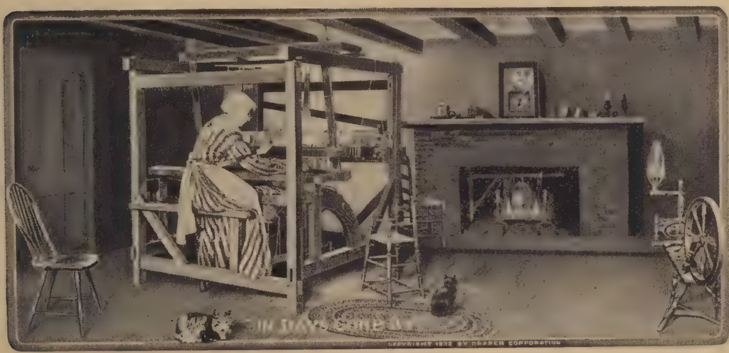

Our Research a Double Job For Country and For You

It is our practice, when a let-down in the business tempo interferes with the normal output of our looms, to increase our research and development effort.

We took this step when the defense program called for the progressive curtailing of loom building.

Then the defense program became a war program. Men trained in building better looms had ideas for building better war machines. Our government had use for them—and part of our development force was changed from peace work to war work.

But loom development must not stand still.

There is a war job for our research men if you are to keep your looms running to capacity on fabrics sorely needed by our soldiers and sailors and airmen.

Looms cannot be kept running without repair parts, and the war is taking the materials from which many of

these parts are fashioned. Substitute materials or new construction must be found.

Research must find them, and many testing periods must prove them—for we must eliminate as far as we can any chance of the failure of these substitutes. And we must ever have it in mind to cushion any blows to usual mill practice that may come from wartime changes.

Some Substitutes Proving Improvements

Ordinary substitutes are things to avoid. Wartime substitutes, when made by us for Draper looms, will be offered only after the same research and test given to all new design.

Happily for us—and for you—this forced research and test along neglected lines is uncovering what may be real improvements in some substitutions.

The Frog Rubber

For instance, a block of rubber has cushioned the forward movement of the Frog since it was introduced on Draper looms in 1896—the only radical improvement in the Frog since George Draper's invention of the loose Frog steel piece in 1863.

Now rubber is on the way out for this purpose and we must find something to take its place.

We are putting out a spring device that appears to please the few mills where it has been tried. They have reported that it gives a smooth, easy check for the Frog, does not crush as easily as the rubber and wears longer. To date no failures have been reported. It may prove a permanent improvement.

So far we have made 86 necessary substitutions for brass. We are not able to say now that many of them are likely to be improvements, but they will do the work for the duration. Meanwhile our research continues.

Tallow for Shuttle Bolt Nut

One of the brass substitutes is the steel nut for the shuttle bolt. Its one drawback is the danger that it may rust on. This can be prevented by putting a bit of tallow in the nut socket in the side of the shuttle.

Watch Your Fixing

While we are pushing our research and experimental work to give you the best possible replacements for loom parts banned by wartime shortages, it is up to you to do what you can to keep down breakage and excessive wear of loom parts.

This means good loom fixing—the best possible.

Good fixing always is of first importance. Today it is a patriotic necessity because of the wartime need of getting along with what we have—and making it last for the duration.

For good fixing you need supervision and helpful suggestion. All your fixers are not of equal ability. By supervision you can eliminate some of the bad habits of poorer fixers and tone up the work of the good ones.

New Lining-up Gauge Costs Less

To insure good loom fixing, every weave room should have a set of gauges for correctly lining up the various loom mechanisms and keeping them lined up.

There should be a set for each lot of looms if the looms differ in model or construction. Naturally these gauges cannot be ordered from a catalog.

Give us the model of your looms and approximately when they were installed, and we will send you a list of the proper gauges for your looms and the price of each.

They are moderately priced. The only one that has been expensive was the so-called lining-up gauge, which

positions the Battery from the reed line with the Lay on front center. It sold for $15.00.

We have a new one, simpler but just as good, which we can sell for $5.00.

Information from Damaged Shuttles

Our reports show that a surprisingly large number of mills do not require their fixers to return a broken shuttle to the overseer before they can get a new one.

These shuttles should show the cause of the break or excessive wear and point the way to loom adjustments to lengthen the life of the shuttle. In other ways, too, they may give information that will assist the overseer in directing the work of his fixers.

Incidentally, in Cotton Chats of September, 1940, we gave a number of tips on prolonging the life of your shuttles; and in the April, 1941, issue there was similar information on bobbins. If you saved those issues, you might find them of interest in these days of scarcity.

Replace Worn Out Bobbin Cans

It is poor economy to continue to use bobbin cans that are jammed or broken. They will score your bobbins or throw them upon the floor or into the loom where they or some of the loom parts are broken. Besides the loss from broken bobbins, some of the damaged ones will get back into use and cause spinning and weaving troubles, including smashed shuttles from incomplete transfers.

Save Your Set Screws

Set screws in broken castings often are carelessly thrown away with the castings. This happens because the new casting comes with its set screws.

There is an impending shortage in set screws, and those from old castings should be removed and saved for use later on when you may need them.

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Give us the model of your looms and approximately when they were installed, and we will send you a list of the proper gauges for your looms and the price of each.

They are moderately priced. The only one that has been expensive was the so-called lining-up gauge, which

positions the Battery from the reed line with the Lay on front center. It sold for $15.00.

We have a new one, simpler but just as good, which we can sell for $5.00.

Information from Damaged Shuttles

Our reports show that a surprisingly large number of mills do not require their fixers to return a broken shuttle to the overseer before they can get a new one.

These shuttles should show the cause of the break or excessive wear and point the way to loom adjustments to lengthen the life of the shuttle. In other ways, too, they may give information that will assist the overseer in directing the work of his fixers.

Incidentally, in Cotton Chats of September, 1940, we gave a number of tips on prolonging the life of your shuttles; and in the April, 1941, issue there was similar information on bobbins. If you saved those issues, you might find them of interest in these days of scarcity.

Replace Worn Out Bobbin Cans

It is poor economy to continue to use bobbin cans that are jammed or broken. They will score your bobbins or throw them upon the floor or into the loom where they or some of the loom parts are broken. Besides the loss from broken bobbins, some of the damaged ones will get back into use and cause spinning and weaving troubles, including smashed shuttles from incomplete transfers.

Save Your Set Screws

Set screws in broken castings often are carelessly thrown away with the castings. This happens because the new casting comes with its set screws.

There is an impending shortage in set screws, and those from old castings should be removed and saved for use later on when you may need them.

COTTON CHATS

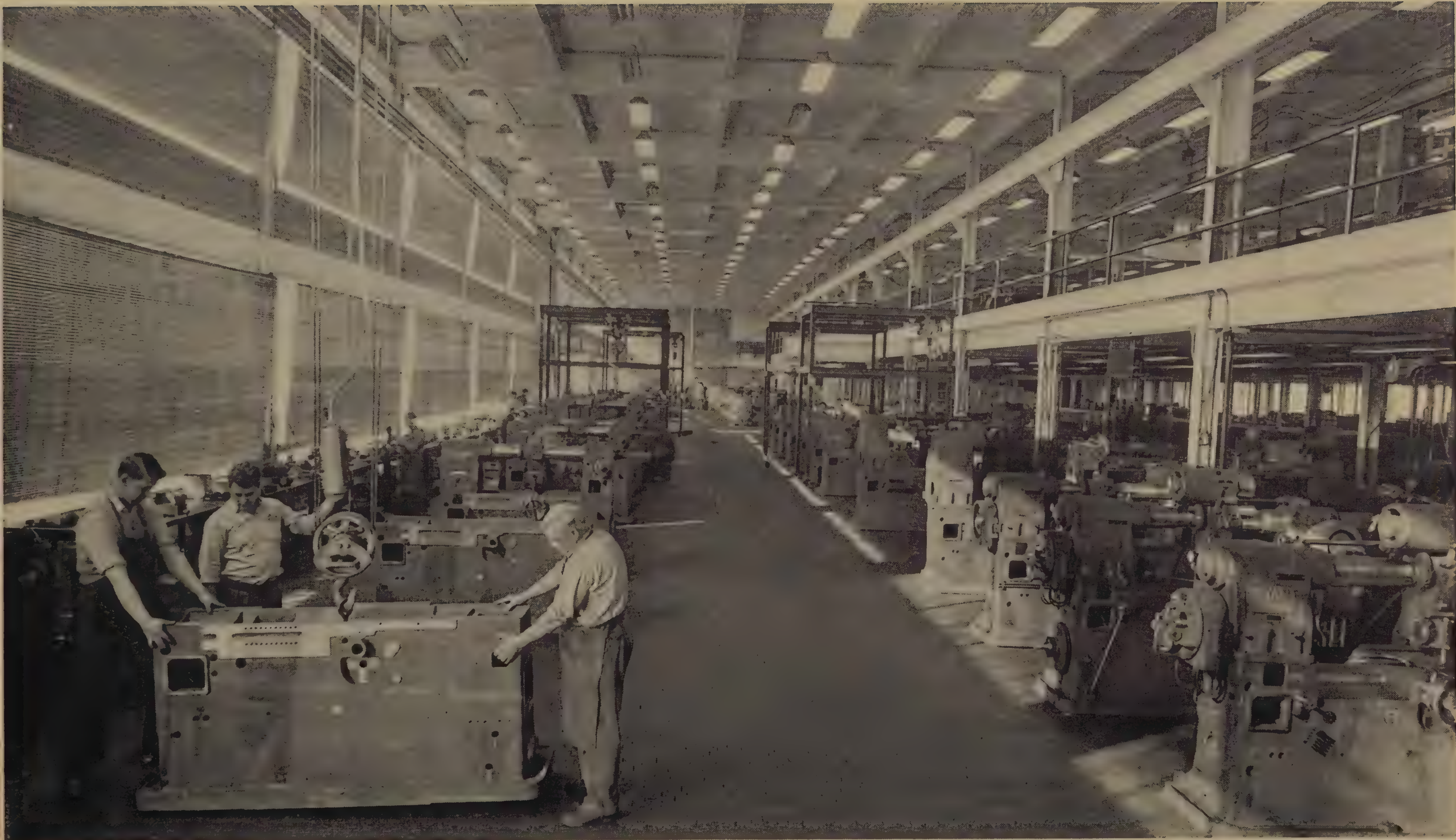
TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A

DRAPER CORPORATION HOPEDALE MASS

NUMBER 355 DECEMBER 1942

Looms Are Sidetracked For Implements of War

Addition to Draper Shops Started in 1941 under Defense Program

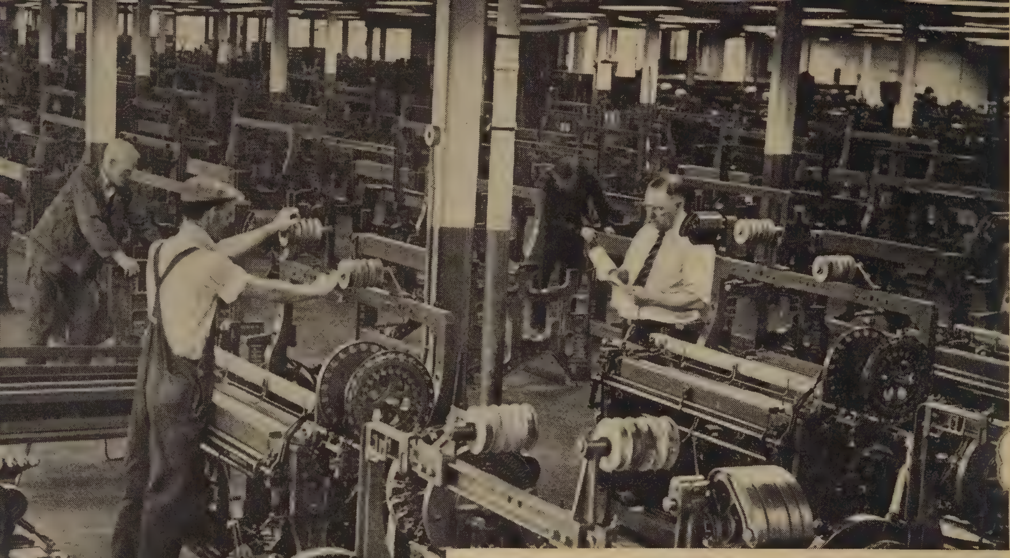


Building Internal Grinders—Under the Defense Program We Began to Build Machine Tools and Have Been Producing Internal Grinders in Quantity Since Last February

In Production in Hopedale

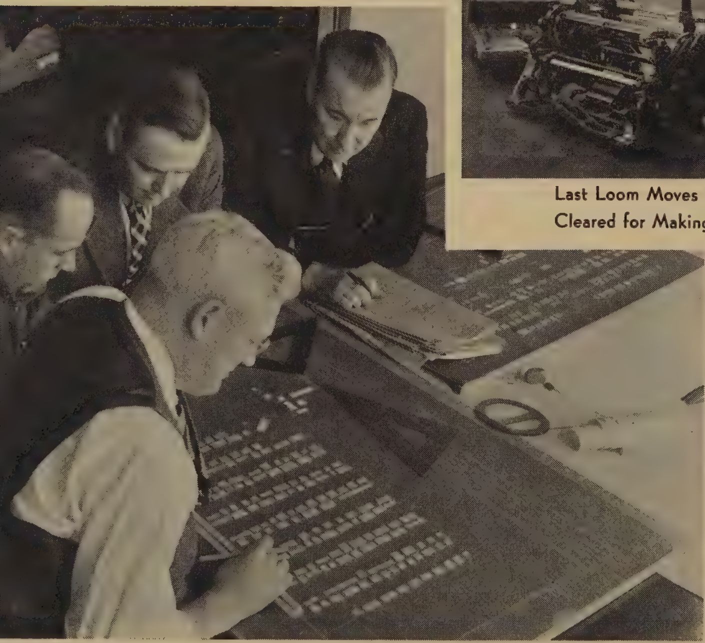
In Use in Guadalcanal

The War Program Calls for Armament for Our Soldiers and Sailors
Already at Full Production on Howitzers



Building Looms on Peacetime Erecting Floor

Last Loom Moves Out as Erecting Floor is
Cleared for Making Equipment for Airplanes



Draper Engineers
Planning
New Airplane
Equipment Job

COTTON CHATS

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 356 FEBRUARY 1943

Draper Meets Emergency
Laminated Shuttle a Success

Draper research has developed a laminated dogwood shuttle.

It was developed to meet an emergency.

It is proving under mill tests just as good as the dogwood shuttles now in use. It may prove better.

The emergency is caused by a steady decline in the supply of dogwood shuttle blocks of the right sizes.

Nine months ago the shortage was becoming so acute we were forced to tell you that in the near future you might have to accept persimmon shuttles on some orders.

Anticipating such an emergency, we had taken three distinct steps to meet it.

First, we started an intensive search for a larger supply of dogwood.

Through the splendid cooperation of our suppliers we were able to continue to fill all orders for dogwood shuttles.

But we have been unable to discover any new or unknown sources of supply.

And now the threatened shortage is here.

Trying to Lick the Shortage

Our second move was for a substitute material for shuttle blocks.

Constant research over many years has proved there is no good substitute for wood. For instance, no plastic yet made has the proper characteristics.

Once a year at least, for many years, we have made a careful review of the whole field of plastics with the idea of adaptation to shuttle-making—always with hope, but never yet with any success.

So more than a year ago we instituted a world-wide search for a wood that would take the place of dogwood. We uncovered some prospects, but nothing satisfactory has yet been found.

Research was our third line of effort—for any other way of meeting the emergency.

The current practice in sawing out shuttle blocks makes use of but a small part of the dogwood log. Much perfectly good wood is left, but in sizes too small for whole shuttle blocks. These small pieces have been of limited value for the smaller shuttles used abroad, but never have been any help to the domestic shuttle-maker.

This suggested a laminated shuttle.

Acting on the suggestion, our Research department went to work and has perfected a method of uniting these smaller pieces of dogwood by a permanent joint that is stronger than the wood itself.

This permanent joint does for wood what welding does in binding two pieces of steel. It is achieved by means of a special adhesive under powerful pressure.

The strength and permanance of the joints has been proved by the many A S T M shearing tests to which these

laminated blocks have been subjected. In every case the joints were stronger than the wood.

The results were the same in tests made on blocks that had been soaked in water for 48 hours.

And now you have the Draper Laminated Shuttle.

Proved in Mill Tests

Like all Draper developments, the new shuttle was tested in a number of mills on a variety of fabrics.

Limited sales followed. To date more than 10,000 have been sold, and 4000 of them have been running long enough under regular mill conditions to prove their high quality. All reports are favorable.

Laminated woods are not new. Our aviators trust their lives to laminated propellers.

You can put your trust in these laminated shuttles.

They are better than persimmon shuttles.

So far they have proved as good as the one-piece dogwood shuttles you are now using.

We believe they are just as good.

Perhaps they can be made better. To that end our research is being continued.

Open to All as War Contribution

We are at war. We are in it to win, and winning calls for co-operation.

Dogwood shuttles are necessary in the weaving of the quality fabrics needed by our armed forces.

The invention of the laminated shuttle has greatly enlarged the supply of dogwood shuttles that can be made available to the industry.

For these reasons we are taking no steps to reserve for ourselves alone the results of our research.

The laminated shuttle is a war substitute.

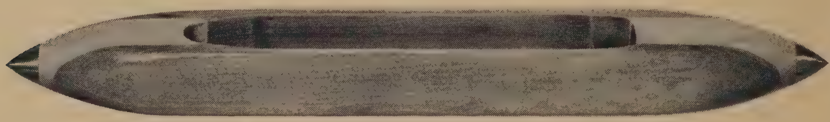
The right to produce it should be made available to all. We offer it to the mills and to all shuttle-makers

without reservation. We hope it will help our industry in its war effort.

Will Replace Any Shuttles That Fail

The Draper Laminated Shuttle is already being sent out in certain medium sizes.

We are so sure of the quality of this product that we will replace without charge any shuttle that fails at the joint, regardless of the amount of service it has already given.



Draper Laminated Shuttle

Center Section Retouched to Show Laminations
Joints hard to detect in real shuttle

Shuttle Shipments

We are making constant effort to be able always to make immediate shipment on shuttle orders.

But under wartime conditions, many of them beyond our control, we may fall short occasionally without your support.

It will help us, and your mill as well, if you will anticipate your needs by sending us orders for monthly shipments of shuttles or by placing quantity orders well ahead of the time when you will be out.

If at any time you find you are out of shuttles, or nearly out, due to a delay in ordering or failure of our shipment to arrive on time, phone or wire to our nearest office. If we do not have your exact shuttle in stock, we probably can substitute a shuttle that will keep your looms running satisfactorily until we can get your regular shuttle to you.

COTTON CHATS

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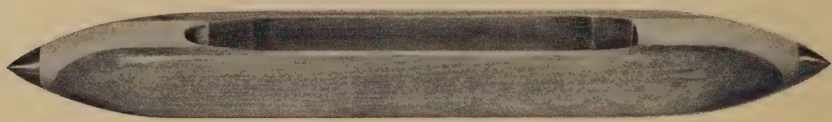

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COTTON CHATS

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PRINTED IN U S A

DRAPER CORPORATION HOPEDALE MASS

NUMBER 357 JULY 1943

Draper Workers and Their Family Stake in the War

A canvass of Draper Corporation workers — in Hopedale, Spartanburg, Atlanta, Beebe River and our Maine and Vermont loggers — shows practically every family has a personal stake in the war and a quiet willingness to make almost any necessary sacrifice to bring American victory and put an end to predatory war by Hitler and the Japs.

Before the war, our workers were busy building machines of peace. Today they are producing implements of war. There are vacancies in their ranks. The men who have gone to war equal 19% of the men left in our employ. Some vacancies have been filled by mothers, wives and sisters.

To these Draper workers who unostentatiously bear their war burdens and loyally do their daily bit for the war effort this Cotton Chats is dedicated. They are keeping the home-fires burning by turning out the equipment and munitions our boys need to win the war.

There are now 595 Draper employees in our armed forces; 423 fathers and 30 mothers have from one to four sons and daughters in our country's service and 20 wives have seen their husbands depart for military duty. Hundreds of others have brothers and sisters or grandsons on the service rolls; and near relatives just outside the family circle give nearly all the rest of our 3097 men and 450 women workers their personal interest in each day's news from the front.

Alfred S. Spadoni
Snagging Room
Father of Fernando

Fernando P. Spadoni, at Pearl Harbor, gunner on plane from which he escaped when it burned in Coral Sea. Reported March, 1943, missing in action.

Herbert B. Clark
Main Office
Father of Leverett

Leverett B. Clark, 2d Lieut. Army Air Corps, piloted plane Brazil to Accra, Africa. Missing in action May 8, 1942.

Leon Hammond
Tool Room
Father of Lowell

Lowell Hammond, tail end gunner, shot in Coral Sea battle. Purple Heart to mother. First Hopedale man to be reported killed in action.

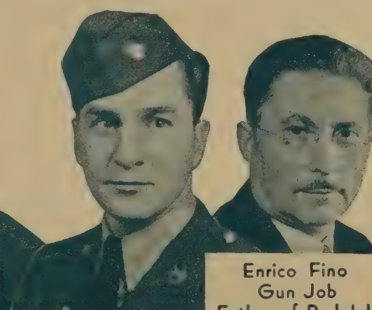
Harriet Hall
Shuttle Job
Aunt with whom
Wallace lived

Francis Wallace, 2d Lieut. Army Air Corps, bombardier, Australia, reported missing in action December 31, 1942.

Francis X. Trudell
Shipping Room
Father of George

George T. Trudell, Lieut. Navy Air Force, twice wounded, missing at Corregidor May 11, 1942.

Purple Heart awarded and to come.



Enrico Fino
Gun Job
Father of Rudolph

Rudolph J. Fino, private, killed in action in North Africa April 6, 1943.

Michello Coscia
Foundry
Father of Joseph

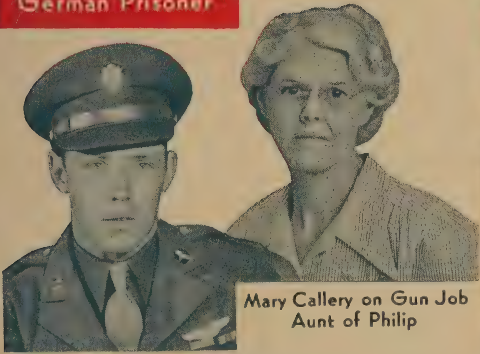
Joseph Paul Coscia, seaman, reported missing in action January 22, 1943.

Sabastian P. Taralli
Ring Job
Brother of James

James Taralli, Coast Artillery, reported killed in North Atlantic (probably Iceland) September 5, 1942.

Eight Draper Families Mourn These Heroes Who Gave All for Their Country

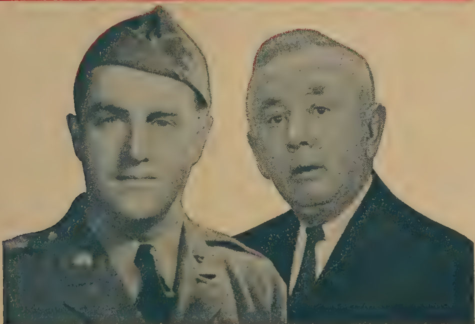
German Prisoner



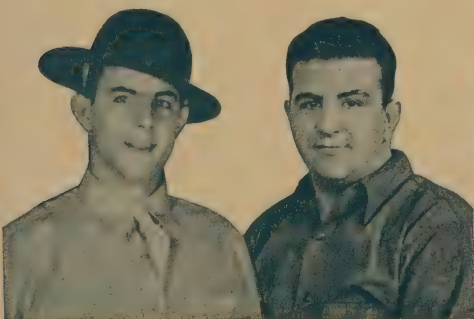
Mary Callery on Gun Job
Aunt of Philip

Sergt. Philip J. Callery, former Draper worker and tail gunner on raid with RAF, forced down in Germany and taken prisoner. Twice decorated. Father killed in First World War.

Prisoners of Japs in Philippines



Sergt. James F. Moran, Signal Corps, taken prisoner when Japs captured Manilla.
Father—James, on Spindle Job.



C. Joseph Schiapucci in Coast Artillery at Corregidor when taken by Japs.
Brother —Michael, in Foundry.

Madeline Cornell and Elizabeth Ash, Beebe River, each have 3 Sons in war.
16 Draper Fathers have 3 Sons each.

Fathers with 4 Sons in Service

Walter Taylor
Drilling Job

Henry Bouchard
Electrician on
Grinder Job

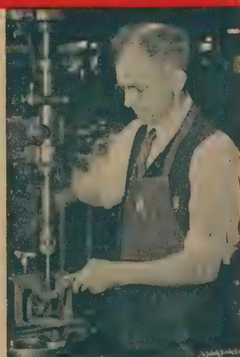
Bouchard's daughter Marian is the wife of Taylor's son Wilfred.

Adrift 10 Days Longer than Dad

George P. Earl, navy gunner on torpedoed ship, 22 days in lifeboat before rescue.
Father, Henry E. Earl, Draper electrician, torpedoed 25 years ago, in lifeboat 12 days.

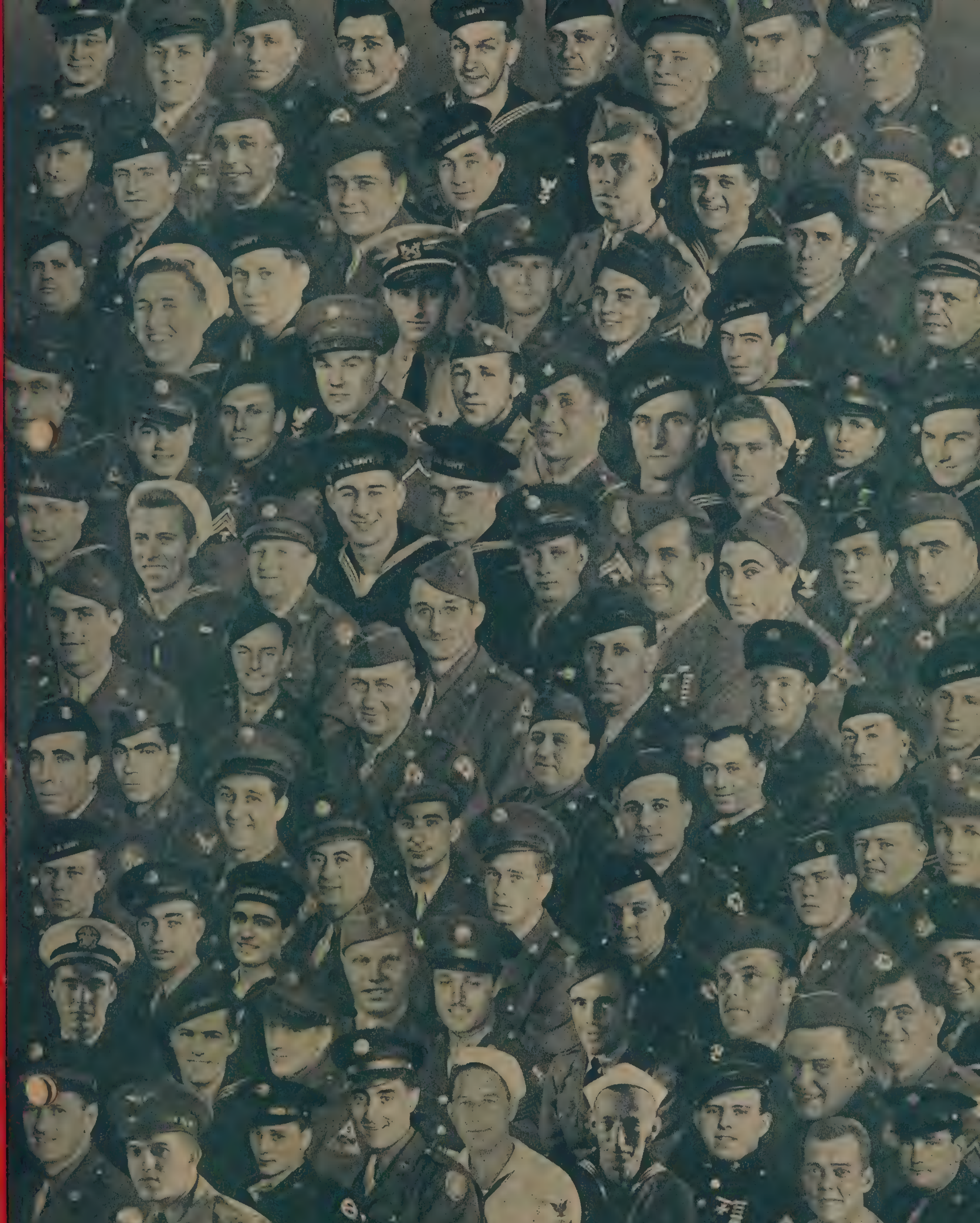
Each has 3 Sons and a Daughter in Service

Malcolm Turner
Heddle Job
51 Years
a Draper Employe



George W. Chesmore
Temple Job

Some of the 595 Draper Wor



rs Now in Our Armed Forces

Two Hopedale Boys Who Have Ferried Planes and Troops to Battlefronts

Captain Robinson Billings, son of Harry A. Billings, vice president of Draper Corporation, attached to Army 7th Ferrying Command. He has delivered planes to places from Maine to Mexico and Alaska. Just now doing executive work at Montana base which directs movement of planes and supplies over Alcan highway to Alaska.
His brother William, Lieutenant (j g) in Navy, is now somewhere in the Pacific.

Major Harry N. Tower, after graduation at San Antonio in same class as Capt. Billings, was assigned to Troop Transport and sent to England. Made 16 trips of 1800 miles each to Africa, carrying 32 troops per trip. Now in this country training fliers in overseas tactics of troop transport needed for European invasion. His father, Forrest R. Tower, asst. foreman of Milling job, served with the Yankee division in last war and was wounded 5 times.

Robert Draper at the Barbed Wire Boundary Line of Egypt and Libya

Robert C. Draper, son of B. H. Bristow Draper, president of Draper Corporation, joined the American Ambulance Corps in December, 1941. Went to Egypt, and for a time to Syria. When Rommel reached Egypt, Robert's unit was attached to the crack 7th Armored division of the Eighth English Army. He served through the battles around El Alamein and the pursuit of Rommel as far as Bengazi, when his unit was relieved. He arrived home recently by plane from Egypt via Accra and Natal.
His brother Eben is a private in the U. S. Army.

Col. William Smith, 38, on General Staff of the Airborne Command has highest rank in the Army of any Hopedale boy. He is the son of S. Fred Smith, 40-year man in our Purchasing department.

In the Coral Sea

The burning plane from which Spadoni and nine companions were rescued. This was shortly before the battle in which he was reported missing.

The Girls Fill in as The Boys Go to War

The shortage in manpower is slowly reducing our force of workers and is but partly offset by an increase of women workers in all our plants from 88 in January, 1941, to 450 at this writing.

Regular visitors often have spoken of our custom of all male help in our main office. They are mildly surprised now to see about half of the office desks occupied by girls.

In the shops, too, women are doing excellent work. Some of them are proving skillful machine operators on delicate gun-job work, and others show efficiency in the difficult work of toolmaking.

Wartime Change in Our Main Office

Miss Pauline Nason Enters Office to Start as First Woman Main Office Worker July 13, 1942

Veteran Umpire Takes a War Job

Bill Summers, now in his 11th season as American League umpire, has spent 15 winters in leisure at his home in Upton. This year it did not seem right to Bill to loaf with his country at war. So he asked us for a job—any job—and the pay wasn't so important. So Bill spent the winter on a war job in Hopedale.

Commander John L. Woodbury, 38, Atlantic Squadron, has highest rank in Navy of any Hopedale boy. He is the son of John E. Woodbury, 25-year man in the Wood room.

Our Guns Go to War

Where Accuracy Counts

Mary L. Giampietro boring powder chamber on a 75 Mil. Gun. An error of one-thousandth of an inch may spoil the gun.

Dorothy Cassamassa turning cone seat and counter - boring for cartridge flange.

To Save a Soldier's Life

The Blood Donor Drive of the Boston Metropolitan Chapter of the Red Cross in Hopedale March 8 to 12 broke all records for Mobile Units for the Country for a single day's take and for the week. Scores of disappointed donors were turned away. The last day's record was 233 pints; for the 5 days 1071 pints.

COTTON CHATS
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DRAPER CORPORATION HOPEDALE MASS
NUMBER 358 OCTOBER 1943

The Boston Sunday Herald of August 29 had a story of the production of the 75 millimeter pack howitzer by Draper Corporation. Although written by a Herald staff reporter, it was authorized and sponsored by the Boston Ordnance department. By request, we are reproducing that article.

New Gun Made in Hopedale Blazes Way for U. S. Victories

By JOHN O'CONNOR
(Approved by U. S. Army)

The Army has decided to take the wraps off its 75 millimeter pack howitzer and tell the civilian public something about it. The enemy knows a good deal about it, much to its sorrow, for the 75-MM pack howitzer turns up in the most outlandish places on battlefronts the world over.

The Marines have found it the handiest, dandiest thing for their beach-head landings in the South Pacific; the Army has just blasted its way across Sicily with it, and now even paratroopers would not dream of soaring down on enemy-held territory unless the 75-MM pack howitzer, loaded in six packs, came soaring down with them.

(Continued on Page Two, Section B)

New U. S. Gun Blazes Way For Victories

(Continued from First Page)

Who makes this all-purpose, extremely maneuverable field piece? Some arsenal, perhaps, or some well-established gun-smithing concern? Not in this war. One of the few places where this weapon is being turned out today is at the Draper Corporation in Hopedale, a plant that has been producing looms, of all things, for 127 years. Its employes never so much as saw the inside of a cannon until 18 months ago.

The Boston Ordnance District, under the command of Brig.-Gen. Burton O. Lewis, went "shopping" for a plant that could turn out the pack howitzer, and its experts wound up in Hopedale at the office of the Draper Corporation. Could this concern make the gun, and make it in mass production? After an inspection of the gun's plans and specifications, the Draper Corporation decided that it could. It did just that, and now, 18 months later, its production has multiplied more than seven times.

It was no soft job the Army laid out for the Draper Corporation. Draper not only had to make the gun, but make the jigs and fixtures with which to make the gun... machinery that could reduce a solid block of steel into multiple parts, some requiring a preciseness of one-tenth of one-thousandth of an inch. Draper made these jigs and fixtures. It even designed the machinery that cut the time of one boring job from four hours and 15 minutes to 14 minutes flat. You can drag out that worn term, "Yankee ingenuity," if you wish, but ordnance experts call Draper's production of the 75-mm. pack howitzer one of the best tooling jobs in the country.

What can this pack howitzer do? It can stand off at 7500 yards—more than four miles—and drop a wickedly-destructive shell on a crossroad. Thus, the mortality rate on enemy gun emplacements, machine gun nests, and the like, is bound to be high when this baby is brought into play. It is even more accurate at distances up to 7200 yards, and its shells go screaming at the target at the rate of 1250 feet a second.

'ALL-AROUND' WEAPON

This gun, which mechanically is the same weapon used by the Army in the last war, is termed by the ordnance department "an all-around" weapon, where any gun has to be moved by manpower.

It can be dismounted into six mule packs, lugged over mountains and through streams, and slapped together again in eight minutes. The gun itself, or that part made by the Draper Corporation, weighs 380 pounds from breech block to muzzle. It contains 43 parts that can be assembled without the aid of a single tool, and Draper makes all 43 of these parts with the exception of a cotter pin and a set screw. It is fair to say that this gun is the most difficult to make because it must be put together by hand.

There are three other sections of the gun, made by other concerns. These sections include the recoil mechanism, the sighting equipment and the carriage. All together, the total weight of the weapon in firing position is 1269 pounds. When the barrel loses its accuracy it is thrown away. Thus, Draper supplies 25 extra barrels with every 100 turned out. It doesn't require many weeks of use before a replacement is necessary because this pack howitzer speaks its piece six times a minute.

OFFICERS KNOW FEATS WELL

The feats performed in combat by this gun are well known to officers of the Boston Ordnance District, and men like Lt.-Col. F. O. Chase, chief of the artillery branch, get considerable lift when they learn that the Marines have used it to sink enemy submarines lurking offshore, or that paratroopers have dropped out of the sky with the

BOSTON HERALD

BOSTON, SUNDAY, AUGUST 29, 1943

HOPEDALE PRODUCT IN GUADALCANAL—American fighting men blast away at enemy with the Army ordnance department's 75 millimeter pack howitzer, a weapon being turned out at the Draper Corporation's plant in Hopedale. Story on Page 1.

weapon to blaze the way for invasion troops on foot.

This gun is the baby of the Boston Ordnance District, and it also is the favorite production child of the Draper Corporation. This is easy to understand because the Ordnance District found a production incubator in the Draper Corporation, and the Draper Corporation appears interested solely in breaking its own production records.

The pack howitzer enters the Draper plant as a rough gray cylinder of steel. It has a hole bored through it, and that is about all. It leaves the plant a gleaming instrument of destruction, and it goes to the fighting fronts after a series of pounding tests at the proving grounds in Maryland. Hundreds of grinding, cutting, tooling and honing operations, some too intricate for even engineers to explain to laymen, are undergone before the gun leaves the sunlit Draper factory.

COMMUNITY PRODUCT

Draper Corporation is doing its most important production job since its founding in 1816, when Ira Draper patented a new type of loom. Not only is this weapon a Draper product. It is a community product. It is the product of America, working.

It is a community product because the Draper Corporation is the town of Hopedale, and the town of Hopedale is the Draper Corporation. The town's population is approximately 3200, and most of the men work in the plant. The workers also come in from Milford and the surrounding countryside. Many of the more than 500 women employed

in the plant also work on the gun, mothers with sons who are using the gun daily on scattered battle-fronts.

Behind the production lines at Hopedale, the Draper Corporation has its own generals to direct the campaign. They are C. F. Butterworth, chairman of the board; B. H. Bristow Draper, president; H. A. Billings, E. N. Darrin and T H. West, vice-president; B. H. Bristow Draper, Jr., treasurer; H. W. Thayer, works manager, and C. F. Snider, secretary.

They all seem to agree on one thing in the present emergency... "We'll keep on making this gun as long as the Army ordnance wants it....and then we'll go back to making looms again."

Confusing, isn't it?

This Howitzer Went to New Guinea

Two press association pictures on this page and the next confirm the statement of the Herald that this pack howitzer can be taken down, transported by mule pack or airplane and set up quickly in all sorts of otherwise inaccessible places to carry destruction to the enemy.

ASSEMBLED GUN—This big gun was in pieces when it was carried from Nassau Bay, New Guinea, over perilous Lababia Ridge. Quickly assembled, it was put to work and here it rips Jap Targets on Mount Tambou and along Komiatum trail.

Photo by Acme

This One Went to China

In the picture below, by International News Photos, we see a 75 mm pack howitzer on the China front.

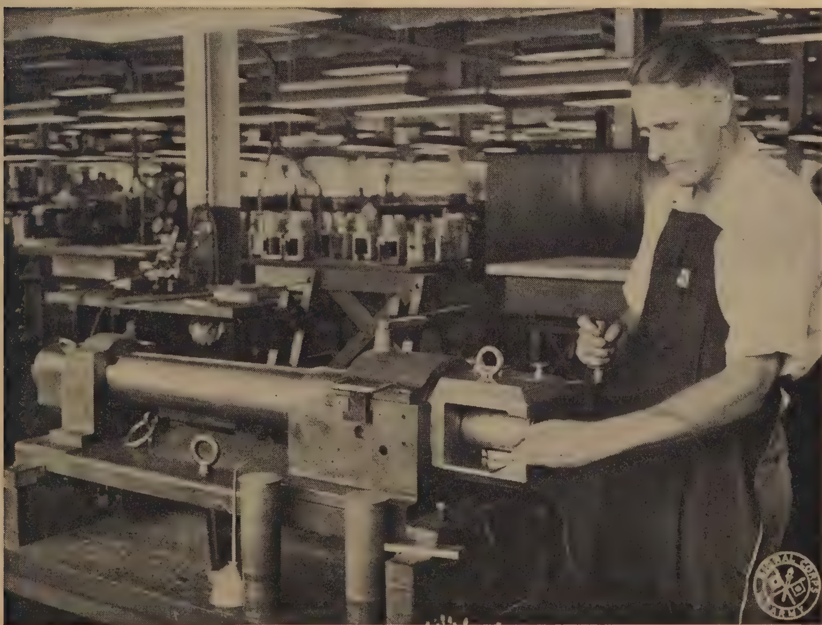
The gun, taken apart and closely packed in proper containers, was shipped half way around the world, perhaps by a combination of railway, boat, airplane and mulepack, to be assembled by Chinese students under the direction of American instructors. It has the wooden-wheel mount provided in all cases requiring airplane or mulepack transportation; but whatever the mount it is the same devastating weapon to Nazis and Japs.

The pictures on the following pages show the pack howitzers in the process of construction on our gun job in Hopedale. They are from photos taken by the Army Signal Corps.

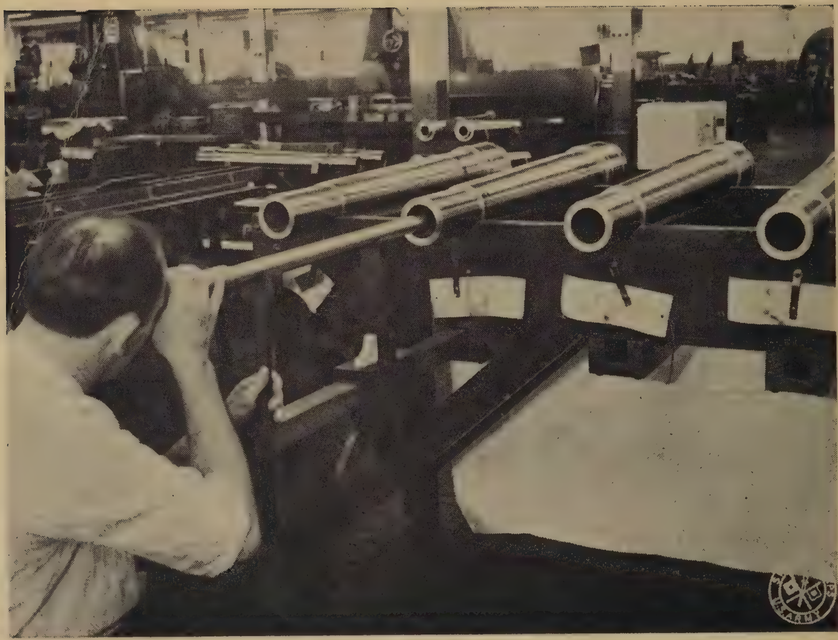
Part of First Floor of Draper Gun Job

Rifling the Barrel by James Sails

Filing on Howitzer by Mrs. Hazel Townsend, Arthur E. Watson and Miss Mary Callery. A nephew, Sergt. Philip J. Callery, tail gunner, is a prisoner in Germany.



Assembling the Howitzer by Harold J. Parkinson



Inspecting the Howitzer by Edward J. Fitzgerald, Boston Ordance District key inspector at Draper Corporation

Howitzers Ready for Shipment

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A

DRAPER CORPORATION HOPEDALE MASS

NUMBER 359 DECEMBER 1943

Your After-the-War Looms And the Truth About Gadgets

What will the post-war loom be?

Will it be something radically new? How will it affect present methods of operation?

If the loom is to be the same for a while, have we something radically new and revolutionary in character to put on the market after we are suitably organized?

Can looms be bought with reasonable assurance that these new looms will not shortly become obsolete?

Disturbed mill managers are asking these questions, and with abundant reasons.

Starry-eyed hack-writers fill our Sunday sensations and tabloid reviews with lurid prophecies of the wonders of a post-war world.

Some of these day-dreams spill over into the field of industry and textiles with tales of machines-to-be as visionary and fanciful as the mythical adventures of the Baron Munchausen.

Your After-the-War Automobile

Citing "the exaggerated trend of present publicity," an eminent authority said to automotive engineers last week: "Americans who expect the post-war car to resemble a combination of crystal ball and a rolling solarium are putting faith in a fairy tale."

He added that when the industry got around to new models, "Changes will be gradual, not radical."

Your After-the-War Looms

What this automotive engineer said about post-war cars fits the case exactly of your after-the-war looms.

They will be the same High Speed X Series models you hoped to buy before Pearl Harbor changed your plans.

We gave you the first X Model at the depth of the depression after five years of research and test. In the succeeding years, up to the outbreak of the war, we were developing and improving these looms, adapting them to the varying but exacting needs of all long established one-shuttle fabrics and the problems of rayon weaving.

The seven models brought out run 20 to 30% faster, produce that much more cloth per hour and have made high speed weaving the standard for the industry.

We have not stood still while building implements of war. On products not designed by us, our engineers were able to develop better methods of manufacture, to improve quality and speed up output. They also worked out independent problems in armament and munitions.

What we learned, as well as reported developments in materials and methods in other lines of manufacture, must be and is being carefully studied—how it can be applied to our looms and to conditions in textile mills. With pressure for implements of war easing up somewhat, our engineers are now at work again on the loom. But we repeat: Changes will be gradual, not radical.

Diary Inserts Will Be Late

Our Diary Inserts will not be mailed until some time in January.

Although ordered from the makers in plenty of time last summer, war conditions—shortage of help and materials—have caused delay in delivery. We are not yet sure just when we will receive them.

They will be mailed out as soon as possible after they are received.

We regret this delay, but it is a wartime casualty over which we had no control.

We wish you a Happy and Prosperous New Year and trust that before it ends we may again enjoy the blessings of peace.

Draper Corporation

December 25, 1943

Adding Gadgets

Along with dreamy prophets we have the critic who cannot see beyond the noisy fly shuttle. His latest is to blast textile machine builders with "They make only minor improvements, they add new gadgets."

Original ideas in machinery, yes original ideas in every form of human endeavor, have but pointed the way —often to a rough, rocky, hard road.

Adding gadgets—the application of the idea—has measured the advance of civilization.

Henry Ford, asked to name the greatest mechanical invention of all time, replied "the wheel."

The difference between a prehistoric wooden wheel of the oxcart and a rubber-shod ball-bearing automobile wheel of today measures what "adding gadgets" has done to the original invention of the wheel.

The first Northrop loom was a print cloth loom and could weave only fabrics in that class. It could be run 16 looms to the weaver.

Adding gadgets adapted it to other fabrics, until it became the approved loom for one-shuttle weaves.

Adding other new gadgets improved the loom until a weaver could tend a hundred looms.

More new gadgets gave us the high speed loom with no reduction in the number of looms per weaver.

Rayon weaving and its problems called for more new gadgets. They gave us the superior XD Model rayon loom.

The Fly Shuttle

The wheel was the foundation of the automobile and all modern transportation systems. The art of weaving rests on the invention of the first man who drew a strand of yarn through the divided shed of a layer of warp and repeated, to give himself a fabric to cover his body.

The primitive shuttle that followed lasted through centuries and fixed what man desires in a woven fabric.

The fly shuttle came in 1733. It remains the basic motion of the loom to this day. It is unmechanical. It is noisy. It shrieks loudly for improvement.

The best inventive genius in the most wide-spread industry in the world has worked at it. Any substitute motion yet designed does not produce the kind of woven fabric both trade and public demand—a cloth made with a continuous strand of filling yarn.

While that kind of cloth is demanded, the filling must be laid by a carrier that has no fixed mechanical connection with the loom. The industry has been built upon the fly shuttle, and the fly shuttle lives to meet the demands it has established.

The Fly Shuttle is Efficient

And the fly shuttle lives because it is efficient.

There are circular shuttle-less looms, looms with filling handed through the shed by positive mechanical means, looms with the filling drawn from large outside packages. Not one is more than a laboratory piece.

If one of them gave promise of being practical, of showing savings, fabrics without a continuous strand of filling would be acceptable in many cases. We have not neglected this field and our efforts are continuing.

Meanwhile, the "gadget way" has produced one of the world's most efficient mechanical units—the modern automatic loom.

An eminent engineer, in Hopedale on a visit, saw a loom in operation for the first time. He could not see how "such a rattle-trap" could be kept in working order without an army of mechanics. He was astounded to learn that a single fixer of medium mechanical ability could keep 100 looms so that one girl operator could get 94 to 97% of their theoretical production.

He looked at the beautiful fabric being woven and said: "It really is a most marvellous machine."

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 360 FEBRUARY 1944

Forty Per Cent More Cloth on Looms 24 Per Cent Faster

Forty per cent more cloth on X Model looms running only 24 per cent faster than E Model Looms on the same fabric. And 2 to 2 1/2 per cent less seconds and shorts.

Sounds improbable. It isn't. It's a fact.

These figures are from a comparison of production sheets of more than eight years of actual operation of similar lots of the two models by one of the best known mills in the industry.

Both lots of looms were weaving 40″ goods, mostly 2.50 yard drills. The E Models were run at 155 picks, the X's at 192.

On the drills, the number of looms per weaver and per fixer was the same. On a few special constructions, operatives ran from 5 to 7 1/2 per cent fewer X Models.

The cost of supplies and repairs averaged the same per loom for both models according to a most exact and detailed system of accounting.

Yardage Gain Greater than Increase in Speed

We designed X Series Looms to step up the product of each loom by as much as the increase in speed—20 per cent for X's and up to 30 per cent for later models.

To do this we built a stauncher loom reinforced at many points to stand the greater speed and run smoothly.

We improved many of the automatic devices to make them act more quickly and surely.

We planned to reduce stops from mechanical faults —and we did it.

We made provision for larger yarn packages on both beams and bobbins.

Precision-built repair parts, exactly like those they replace, reduce time out for making repairs.

And now, some of these looms have been running long enough to give reliable records of performance.

From the records, this interesting fact stands out. Improvements to provide for high speed actually have so improved the loom that it produces far more cloth than the increase in speed would indicate.

A 40 per cent gain in cloth is something for mills to consider in planning their weave room machinery for post war prosperity.

And as an addition on the credit side of this loom, it weaves better cloth with less seconds.

Shuttles Last Three Years

One of our service men reported the other day that in a mill in South Carolina he had seen shuttles running that were put in the looms early in 1941.

The mill is run on three shifts.

A shuttle life of three years on a three-shift run, with the shuttles still going strong, was enough to make him want to know the secret. The mill was quite willing to explain how they do it.

Before putting it in use they treat every shuttle with a special dressing, and this dressing is renewed as often as needed. Each fixer has a can of this special dressing at his work bench.

The ingredients of the dressing are: one quart of spindle oil; 3 pints of orange shellac; and 3 pints of dryer. It dries very quickly.

If weaving rayon, the shuttle should be carefully wiped with a coarse cloth to remove any loose particles of the dressing.

They keep the leather on both front box plates and binders saturated with tallow. Their records prove this pays a good dividend on the extra work required.

"Washboard" Shuttles

When shuttles begin to show a washboard back wall, there is something wrong that needs prompt attention.

This trouble occurs most frequently when starting a new reed and is caused by one or more projecting dents. The remedy is to smooth up the face of the reed.

An easy way of polishing projecting dents is to fit a shuttle with a piece of crocus cloth cemented to the back wall. The ends of the crocus cloth should be sunk in

the shuttle wall to keep the cloth from being rolled up. Our picture shows how this is done.

This polishing shuttle is run in the loom eight to 10 minutes. If run too long the reed will be damaged. Polishing may be done with the warp in the loom, but the cloth will be discolored while the polishing lasts.

Give each fixer one of these shuttles. A new piece of crocus cloth should be applied for each polishing.

First Big War Job Completed

The Bryant Grinder was our earliest major war job and the first to be finished. The letter reproduced below commemorates this event.

R. E. FLANDERS
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W. J. BRYANT
EXEC VICE PRES & TREAS.
J. B. JOHNSON
VICE PRES & GEN MGR
J. L. HRONEK
VICE PRES & FACT MGR.
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CHIEF ENGINEER

BRYANT
REG U S PAT OFF.

CABLE ADDRESS
"BRYANT"
CODES
LIEBERS LATEST AND
WESTERN UNION FIVE LETTER
AND UNIVERSAL EDITION
TELEPHONE-560

BRYANT CHUCKING GRINDER COMPANY
MANUFACTURERS OF
SINGLE SLIDE INTERNAL GRINDERS
SPRINGFIELD, VT., U. S. A.

January 4, 1944

DRAPER CORP.
JAN 6 1944
Ack. 1-7

Draper Corporation
Hopedale, Massachusetts

Attention: Mr. T. H. West

Dear Mr. West:

I note that you have completed and shipped the last Bryant Grinders on order from us. I am sure that your part in furnishing the 750 grinders has been a major contribution to the war effort especially in making possible the present huge aircraft production in this country. We feel that the Draper Corporation from first to last did an outstanding job and we have been very happy and proud of our opportunity for association with the various people of the Draper organization.

You may be interested in a few statistics regarding the Bryant Grinders built by Draper.

Domestic Shipments: 595 machines to a total of
107 plants in
19 different states

Foreign Shipments:	Great Britain	100 machines
	Australia	15 "
	Canada	7 "
	Russia	32 "
	Brazil	1 "

John Lovely is coming down Thursday of this week to check over some of your surplus parts. It is with real regret that we conclude the major part of this work but I trust that we will have occasion to meet many times in the future. With best wishes for the New Year.

Sincerely yours,

BRYANT CHUCKING GRINDER COMPANY

J B Johnson

J. B. Johnson
General Manager

JBJ/w

COTTON CHATS

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 361 MAY 1944

More about "More Cloth" on Draper High Speed Looms

Our February Cotton Chats told of a Mill that has been running E and X Model Looms on the same fabric and under the same conditions for eight years. A carefully kept record of yards woven over the entire period showed the X Models had produced 40 per cent more cloth while running only 24 per cent faster than the E's.

The percentage was figured on the quantity of cloth produced by the E Models and by the X Models, not on a record of weekly reports on percentages which might not tell a true and complete story.

Our story was a factual recital of what one well known and successful mill has done.

We did not say any other mill could show the same gain. The result would be different in different mills.

This difference would be caused by the degree of modernization of the older looms, whether they have been equipped with various improvements from time to time

and especially the size of the yarn beam. The gain will be less when X Models are compared with thoroughly modern E Models.

We gave the story because we thought it would be of interest to the industry.

There was another reason, an important one.

The Reason

We have watched our X Series looms in mills where they have been installed with a growing confidence that their perfected mechanisms for more efficient weaving would enable them to show a greater gain in yardage over old looms than the increase in speed would indicate.

That confidence has become conviction.

We know they will do more. How much more in your mill is something you want to know. So do we.

If we have opened this subject for observation and discussion we shall have attained our purpose.

We've Done It Before

It has been a Draper custom since the early days of the Northrop loom to report outstanding achievements in weaving—always after careful investigation.

Naturally these reports are a trifle bewildering to men who have followed the regular path of Mill practice, and sometimes skeptics have railed at the reports, even declared them impossible.

Sometimes, too, one of these doubters has been so sure the report was incorrect that he set out to prove his contention. As his experiments progressed he became intrigued with what he discovered, and he kept on until finally he outdid the achievement he had doubted.

The story of the gradual advance in the number of looms per weaver has many such incidents.

Way back in December, 1906, when most of our mills were satisfied with 16 looms per weaver for which Draper

looms were first recommended, Cotton Chats startled the industry with a story that in a Mill in the South five weavers were running 40 looms each without filling hands and were getting 90 per cent production.

Doubters said someone had stretched the truth.

When the fact was established, they said it was an exceptional case which could not become a general rule.

It Pointed the Way

But it set a goal.

The fact and the telling of it set mill managers to thinking. When American textile men get to thinking they want results. And they usually get them.

They began to experiment on more looms per weaver.

Out of their experience and our study and research a scientific approach to the problem was evolved, and the number of looms gradually grew to 100 per weaver on many cotton fabrics.

It took time, about 20 years. It was done, not by the "stretch-out" method of ordering weavers to run more looms, but by studying causes of loom stops and ways of reducing them, eliminating much the weaver was doing.

Incentive was renewed from time to time by stories of outstanding achievements as progress was made.

More Cloth per Loom

Having reached the probable ultimate in more looms per weaver, today's problem is more cloth per loom.

We tackled it first by building new loom models to run at higher speed. The gain in cloth was to equal the increase in speed.

We got this increase in cloth. We believe there is no dispute on this.

There were improvements, however, that should give more cloth without higher speed. Larger yarn beams cut down the time out for changing warps. No cloth can be

woven while a warp is being changed, nor during the cleaning, oiling and greasing of the loom which regularly is done at that time.

A 24 inch beam holds 87 per cent more yarn than an 18 inch beam. The 26 inch beam takes 75 per cent more yarn than a 20 inch beam and 122 per cent more than an 18 inch beam—considerably more than twice as much.

Loom stops from all causes are materially reduced on X Series looms through improved mechanisms, many new devices and precision building.

Every time a stop is eliminated you get more cloth, and this gain counts up faster on high speed looms.

We Are Curious—So Are You

What we want to know—and what you want to know—is the net gain in cloth from the new features of these new looms. It will be in addition to what you get from the increase in speed.

We cannot duplicate in our experimental weave room the varying conditions of all mills.

We cannot get the answer without your help. The answer is important to the entire industry.

Percentages Can Be Deceptive

What we printed in our February Cotton Chats was done in accord with a Draper custom of long standing of publishing carefully verified mill reports.

A few critics have been politely doubtful. Others have quoted percentages and said "it's impossible."

Percentages can be woefully deceptive—if figured on different bases. Forget them and measure your cloth.

The gain will vary with the equipment of your old looms and their condition, with different mills, with different yarns and different managers.

But there will be a gain. It will interest you to find out how much it is.

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More about "More Cloth" on Draper High Speed Looms

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The percentage was figured on the quantity of cloth produced by the E Models and by the X Models, not on a record of weekly reports on percentages which might not tell a true and complete story.

Our story was a factual recital of what one well known and successful mill has done.

We did not say any other mill could show the same gain. The result would be different in different mills.

This difference would be caused by the degree of modernization of the older looms, whether they have been equipped with various improvements from time to time

and especially the size of the yarn beam. The gain will be less when X Models are compared with thoroughly modern E Models.

We gave the story because we thought it would be of interest to the industry.

There was another reason, an important one.

The Reason

We have watched our X Series looms in mills where they have been installed with a growing confidence that their perfected mechanisms for more efficient weaving would enable them to show a greater gain in yardage over old looms than the increase in speed would indicate.

That confidence has become conviction.

We know they will do more. How much more in your mill is something you want to know. So do we.

If we have opened this subject for observation and discussion we shall have attained our purpose.

We've Done It Before

It has been a Draper custom since the early days of the Northrop loom to report outstanding achievements in weaving—always after careful investigation.

Naturally these reports are a trifle bewildering to men who have followed the regular path of Mill practice, and sometimes skeptics have railed at the reports, even declared them impossible.

Sometimes, too, one of these doubters has been so sure the report was incorrect that he set out to prove his contention. As his experiments progressed he became intrigued with what he discovered, and he kept on until finally he outdid the achievement he had doubted.

The story of the gradual advance in the number of looms per weaver has many such incidents.

Way back in December, 1906, when most of our mills were satisfied with 16 looms per weaver for which Draper

looms were first recommended, Cotton Chats startled the industry with a story that in a Mill in the South five weavers were running 40 looms each without filling hands and were getting 90 per cent production.

Doubters said someone had stretched the truth.

When the fact was established, they said it was an exceptional case which could not become a general rule.

It Pointed the Way

But it set a goal.

The fact and the telling of it set mill managers to thinking. When American textile men get to thinking they want results. And they usually get them.

They began to experiment on more looms per weaver.

Out of their experience and our study and research a scientific approach to the problem was evolved, and the number of looms gradually grew to 100 per weaver on many cotton fabrics.

It took time, about 20 years. It was done, not by the "stretch-out" method of ordering weavers to run more looms, but by studying causes of loom stops and ways of reducing them, eliminating much the weaver was doing.

Incentive was renewed from time to time by stories of outstanding achievements as progress was made.

More Cloth per Loom

Having reached the probable ultimate in more looms per weaver, today's problem is more cloth per loom.

We tackled it first by building new loom models to run at higher speed. The gain in cloth was to equal the increase in speed.

We got this increase in cloth. We believe there is no dispute on this.

There were improvements, however, that should give more cloth without higher speed. Larger yarn beams cut down the time out for changing warps. No cloth can be

woven while a warp is being changed, nor during the cleaning, oiling and greasing of the loom which regularly is done at that time.

A 24 inch beam holds 87 per cent more yarn than an 18 inch beam. The 26 inch beam takes 75 per cent more yarn than a 20 inch beam and 122 per cent more than an 18 inch beam—considerably more than twice as much.

Loom stops from all causes are materially reduced on X Series looms through improved mechanisms, many new devices and precision building.

Every time a stop is eliminated you get more cloth, and this gain counts up faster on high speed looms.

We Are Curious—So Are You

What we want to know—and what you want to know—is the net gain in cloth from the new features of these new looms. It will be in addition to what you get from the increase in speed.

We cannot duplicate in our experimental weave room the varying conditions of all mills.

We cannot get the answer without your help. The answer is important to the entire industry.

Percentages Can Be Deceptive

What we printed in our February Cotton Chats was done in accord with a Draper custom of long standing of publishing carefully verified mill reports.

A few critics have been politely doubtful. Others have quoted percentages and said "it's impossible."

Percentages can be woefully deceptive—if figured on different bases. Forget them and measure your cloth.

The gain will vary with the equipment of your old looms and their condition, with different mills, with different yarns and different managers.

But there will be a gain. It will interest you to find out how much it is.

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A

DRAPER CORPORATION HOPEDALE MASS

NUMBER 362 JULY 1944

B H BRISTOW DRAPER

Benjamin Helm Bristow Draper, our President and loved fellow-member, died June 4, 1944.

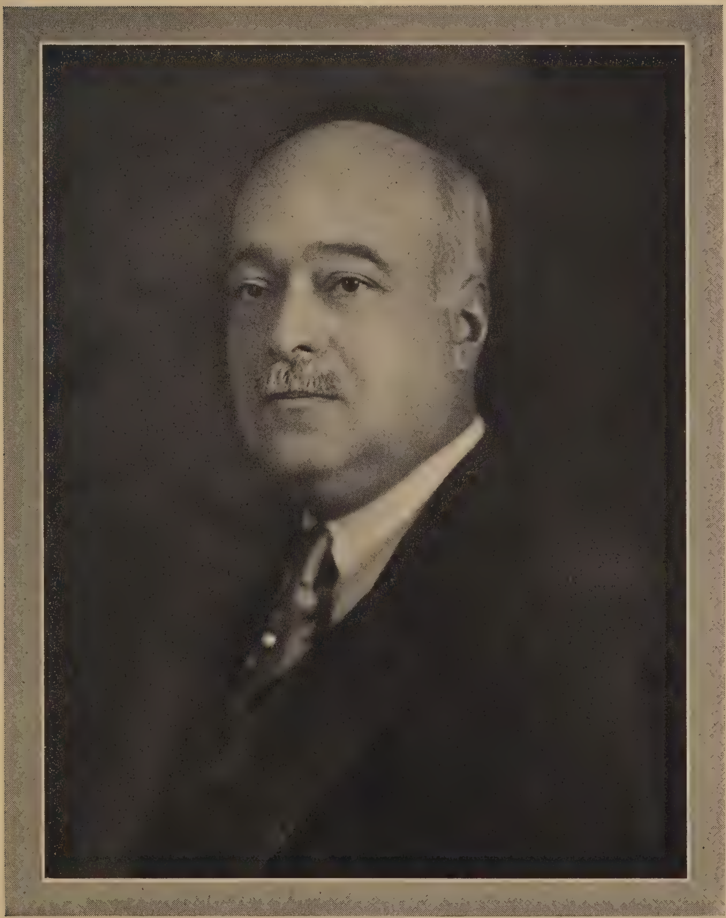
He entered the employ of the then Draper Company in 1906, was elected a Director in 1913, Assistant Agent in 1914, Treasurer in 1923 and President in 1929.

His clear foresight, wise counsel and untiring energy contributed in a large measure to the present success of the Draper Corporation.

He was especially devoted to his friends, the advancement of the interests of the Town of Hopedale and the employees of the business with which his life was so closely interwoven.

He held the highest regard and esteem of his associates, who, by his death, have suffered an irreparable loss and experienced a lasting sorrow.

At a meeting of the Directors of Draper Corporation held June 26, 1944, the committee appointed at the last meeting submitted the above testimonial, which was unanimously adopted, and it was voted that the testimonial be inscribed on the records of the Corporation and a copy sent to the family.



Benjamin Helm Bristow Draper

BENJAMIN HELM BRISTOW DRAPER

Mr. Draper was born February 28, 1885, son of the late Gov. Eben S. and Nancy Bristow Draper. He came from distinguished ancestry, being the fourth generation of Drapers to head the Draper business.

His great grandfather founded the business in 1816. His grandfather, George Draper, gave the firm a national and international standing. His father and two brothers of the third generation developed the Northrop loom and revolutionized the art of weaving. All were prominent in the civil and political life of the state and nation.

His maternal grandfather was Benjamin Helm Bristow, a top-ranking Secretary of Treasury under President Grant and a leading candidate for the republican presidential nomination in 1876.

After an education in Hopedale public schools, at St Marks, Exeter and Harvard, Mr. Draper prepared for his future as an executive of the corporation by working in the Draper shops and in a cotton mill where he earned the position of overseer. He joined the Draper selling force and became in turn assistant agent, treasurer, and in 1929 president of the corporation.

From that time until the day before his death, he was in full control of the business. Its achievements are his monument.

He was a just employer, always interested in the welfare of his help and held their respect and esteem.

He was a liberal supporter of all good causes.

A staunch republican, he never sought public office, but was a delegate to the Republican National convention at Cleveland in 1936.

He was honored in many ways by business associates in other communities; was director of the First National Bank of Boston, of United Shoe Machinery Corporation and Calhoun Mills. He held membership in clubs in Boston, New York, Atlanta and Miami Beach.

He served in World War 1 in the field artillery and was a member of the American Legion, of the Society of Colonial Wars and Sons of the Revolution.

In addition to his widow, Queena Sanford Draper, he leaves three sons, B. H. Bristow, jr., treasurer of Draper Corporation, Sgt. Eben Draper of the United States Army and Robert C. in the Navy; a sister, Mrs. Dorothy Draper Hamlin of Wayland, and a brother, Col. Eben S. Draper, a director of Draper Corporation.

A fitting tribute to Mr. Draper would be: He played his part in life in a manner worthy of his forbears.

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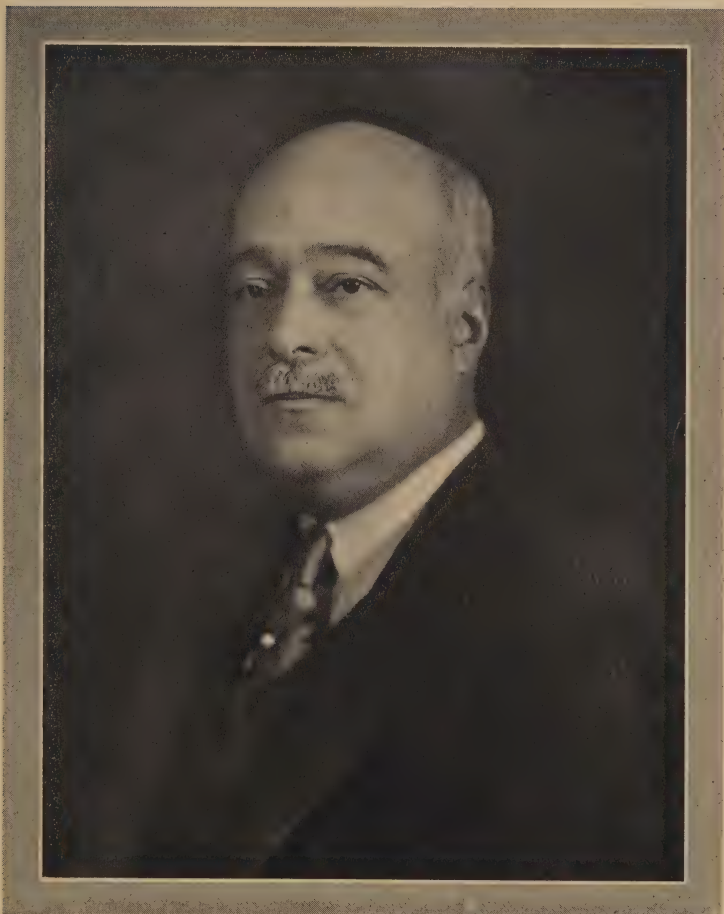

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 363 AUGUST 1945

The Scope of

Research and Development

In the Loom Field

We are all familiar with people whose contributions to current world problems consist of such remarks as:

"What our Government should do is buckle down and balance the Budget."

"There will be no lasting peace unless the nations of the world unite on a plan of mutual cooperation."

They say these things as though they were making a contribution to world thinking, as if such thoughts were new to men struggling with the titanic problems of today.

So also in the field of Research and Development of weaving machinery, mill men frequently say to us:

"What our Industry needs is a loom that will greatly reduce the amount of labor to produce a yard of cloth."

"Loom builders should get away from the unmechanical fly shuttle and develop a new system of weaving."

Again the trite generality—again the absence of any specific suggestion as to how these results can be accomplished—and the implication that we have not been working and spending money to accomplish them.

Evidently there still are many mill men who have little conception of the scope of a modern Research and Development Department. Perhaps that is our own fault. We never have gone into details of our work of developing improvements, thinking mills are interested only in the results. A simple announcement of an improved mechanism often has marked the culmination of years of effort.

Loom building today requires never-ending activity to improve existing models and correct mechanical faults that show up only in actual practice. Close observation in the mill, with frequent stoppage tests and the use of high speed photography, are routine. There is constant research and study in our chemical and physical laboratories of new metal alloys, plastics, methods of treating metal and wood, to ascertain their possible application to looms.

An All Metal Lay Beam no heavier than a wooden lay and with equivalent strength always has been a dream of loom makers. Hundreds of attempts have been made to produce such a lay of practical construction that would give the loom what it has always lacked—shuttle boxes with an absolutely fixed relation to each other and to the race way. Thanks to modern materials and research methods such a lay is now in sight.

Developments in lubrication, antifriction bearings and electricity must be analyzed for possible application to the loom. We have on preliminary trial in a mill an electronically operated warp stop motion, the result of several years of effort. It has attractive features such as 100% elimination of sparking. It also has many "outs" in its present form.

Ever since rayon began to be used extensively 25 years ago, it has been necessary to carry on development work on loom mechanisms or refinements to handle new and

ever-changing weaves and synthetic yarns. Not a single mechanism on the cotton loom but had to be redesigned or altered in some particular before quality rayons could be produced. Yet practically none of these mechanisms is worth while on the cotton loom.

We believe we are near the practical peak of speed on the fly-shuttle loom at around 225 PPM on a 40″ loom. But there is a lot to be done before looms will operate at that speed on most fabrics with a minimum of repair, maintenance and fixing costs. We have always felt that a great hindrance to speed was the present loom picking and checking motions. Regardless of other work in hand we carry on our effort to improve these mechanisms.

Another field being explored relates to basic frame design. By the use of special bracing, counterbalancing and possibly an integral base as used on machine tools, it is possible considerable of the loom's present noise and thrash can be eliminated.

An Automatic Battery Filler

Considering the automatic loom basically as it is today, what automatic features can be added to decrease further the amount of labor needed to operate the loom? An obvious field, with the present high pay of battery hands, lies in some method of automatically replenishing the battery with full filling bobbins. We started work along this line before the war. Now it has been revived and is again being actively pushed forward.

All of the foregoing relates to the present type of fly-shuttle loom, the only system of weaving to survive centuries of experiments with circular looms, electrical looms, looms with a hundred different schemes to carry or blow the filling across from an outside package.

Someday a new system of weaving may be found that will work and make obsolete a large percent of existing looms. Two radically different ideas along these lines are being actively worked on by our engineers. They show

promise, but there are enormous obstacles to be overcome. It is not difficult to produce a loom that will operate on a different system. Circular looms were in operation in Germany before the war. It is quite another job to develop a machine that will weave cloth at a lower cost per yard than the present high speed fly-shuttle loom, *all* factors being considered.

Developments throughout the world have been watched and investigated for years. Two of our people have just returned from Europe where they studied a new system of weaving in process of development there for some years.

Beyond a new system of weaving is the question of whether many fabrics of the future will be woven at all.

We are in the business of building fabric-making machinery, whether it be a machine for interweaving or interlocking spun yarns, or perhaps machines which will lay unspun fibres across each other and chemically bind them together into a fabric which will serve many of the purposes for which woven cloth is now used and can be produced far below the cost of woven cloth. One active development project is being carried on along these very lines, and research goes on continually.

With this activity, results that can be translated into marketable machinery are slow in appearing. They always will be in an old industry over which man has been working for so long.

Just as the best political brains are occupied in attempting to work out practical means to solve current world problems, so our best brains and a lot of cash are being poured out continually to solve these mechanical problems we have been describing; and when more engineers are available these activities will be expanded.

You can hardly blame us for resenting the casual generality that loom builders should get wise to the need for improvement in weaving machinery. We have been at it heart and soul for years from every angle we know. We are very much alive to the need for improvements.

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DRAPER CORPORATION HOPEDALE MASS
NUMBER 364 DECEMBER 1945

A Distinguished Visitor

In the not too distant future you will open your door to welcome a distinguished visitor—a member of the "X" family of high speed looms. Why not plan now to make this visit pleasing and profitable?

As a good host you will prepare your household. Your staff will be ready and eager to do its part. You may want to make some alterations—new lighting or a modern paint job.

We would like to share in your welcome and help you get everything in readiness. We believe we have some helpful suggestions.

The Plan

Undoubtedly some of our thoughts will parallel yours. Let us sit down together and list some of the essentials, so that we may eliminate any awkward moments. There must be a smooth running plan.

From the Opening room to the Weave room every operation should be carefully checked for production of highest quality yarns. Approach each question with an open mind. Get the facts. They may suggest additional opportunities for improvement.

Loom Stoppage Tests

A series of loom stoppage tests should be made and the facts established carefully analysed. Uneven yarns are the cause of a great many loom stops and imperfections in the cloth. These tests will inevitably point the way to improved yarns and increased production.

Slasher operations should be examined to eliminate crossed threads or other imperfections. Moisture, temperature, size, and stretch controls should be checked and adjusted for maximum operating efficiency.

Bobbins with uniform diameter of filling package, and with the feeler bunch properly placed, are of prime importance. You will have in mind the best method of conditioning the filling, not only to set the twist, but to prevent sloughing off.

Perhaps you will give consideration to a new type of shuttle eye or a different type of friction in the shuttle.

Humidity and Temperature Controls

Of course you will plan to establish humidity and temperature controls. Conditions which are ideal for your present looms may prove to be inadequate for new high speed looms. It is necessary to maintain uniform operating conditions at all times. It would be worthwhile to consult your engineers.

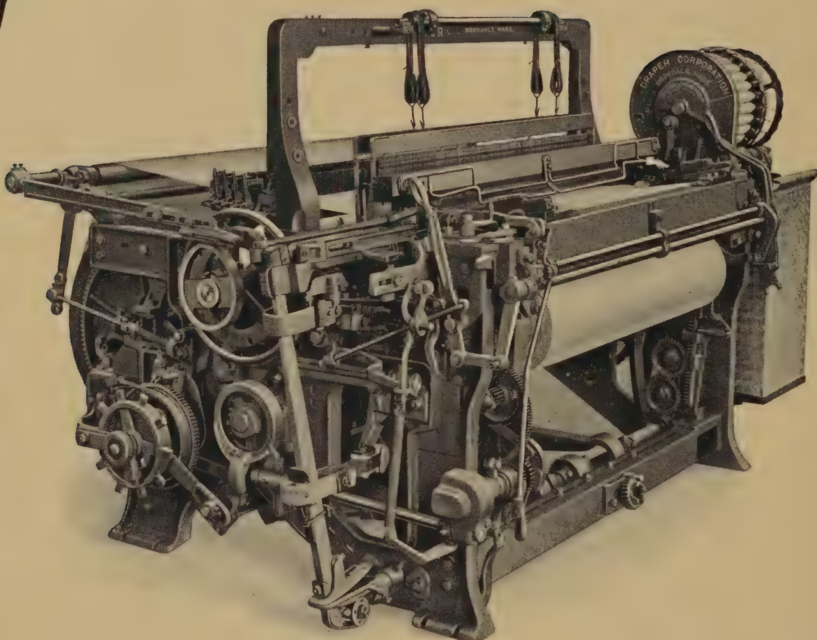
Above all it would be of the greatest assistance to you to have one or more of your loomfixers or overseers visit a friendly near-by mill—for possibly a week or more—where high speed looms are in operation. This preliminary training will prove to be of the greatest value. Your men will be confident they can do their part.

The Big Day

When the big day arrives, our trained personnel will be on hand to cooperate with the fixers and weavers you assign to the new looms. They will make sure that the loom is set for maximum efficiency. They will adjust it to your conditions. They will help in every possible way.

Working together, a successful reception is assured. It will usher in a new period of profitable high speed production. You will be able to meet present production demands. Your mill will be better able to meet future competition.

Your Visitor



X2 Model Super High Speed Loom

A 40" loom runs from 202 to 224 picks per minute on 2 shade weaves

A well prepared household will make his stay
pleasing to him and profitable to you

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 366 AUGUST 1946

Doing a Good Job in Speeding Up E Models

Draper Corporation has set up a new form of service of interest to all mills with looms that ante-date our high speed models.

The aim of this service is to develop and supply parts to be applied to older models to speed them up and give other advantages of our high speed looms.

It was the fixed policy of Draper Corporation, up to the time we brought out the high speed loom, to design improvements so they could be applied to looms then in use. A mill could, by buying new mechanisms it desired, keep its looms fairly up-to-date without a big capital expenditure for replacement of obsolete machines. We were reluctant to abandon that policy.

But the high speed loom, with a heavier and roomier frame, its reinforced and counterbalanced loomsides, its stabilizing top girt construction, and other fundamental

changes we made to insure good weaving at high speed, seemed to be so radically different that we figured it would not be economically sound for a mill to attempt to apply high speed improvements to old looms. It would call for too great an expenditure per loom.

But conditions in the early '30's, when high speed looms were new, and conditions now are very different.

Meeting a Reconstruction Problem

With the end of hostilities, mills faced an urgent demand for fabrics. Looms that had served them well for years still looked good to them. It was apparent that means for speeding up these old looms should be provided. This would save a large capital expense for new looms.

It is a basic Draper policy to try to meet special needs of our friends in the mills.

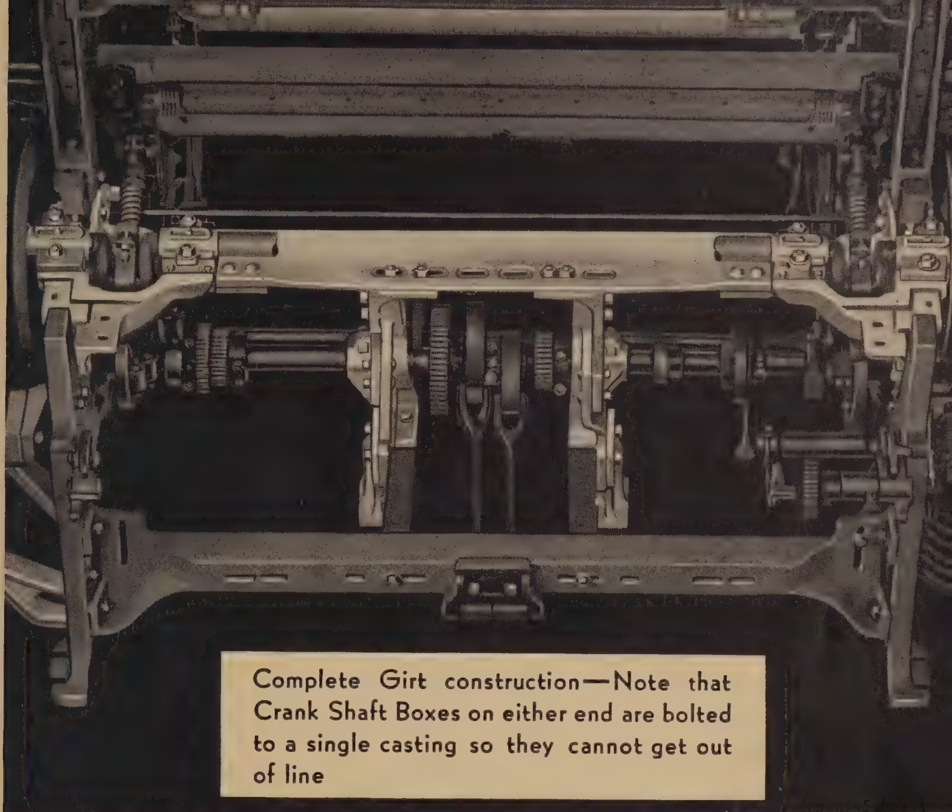
It looked like a big problem. The E Model has a lighter frame and less space between sides than our high speed looms. Hurriedly designed makeshift parts would not do a satisfactory job. Our experience told us that it called for the same careful research and experiment that we put into our development of the X Series.

So we decided to give these mills the benefit of our research into the fundamentals of a high speed loom.

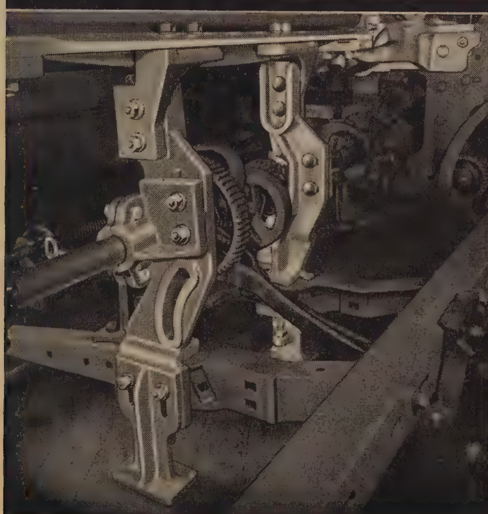
We made it a number one job of our development department to find out what the E Model loom needed to adapt it to higher speed.

We soon found we needed a separate department for this important job, one equipped and staffed to carry on the same intensive study and experiment that we give to development of new looms. Because most of our E Model looms are in the South, we placed this department at our East Spartanburg plant where the work of changing over looms could be carried on in close touch with the mills.

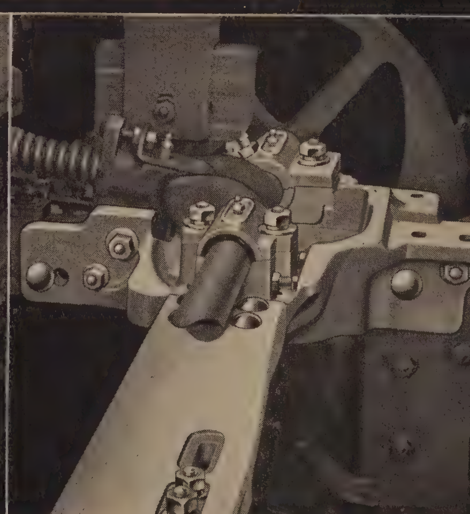
What this new department has already accomplished will be of interest to mill managers.



Complete Girt construction—Note that Crank Shaft Boxes on either end are bolted to a single casting so they cannot get out of line



Cam Shaft Center Box Support and Floor Stand add strength



Shows how Girt Ends add strength to a Loomside weakened by wear

Products of Draper Research to Help You Speed Up Your E Model Looms

Adding Strength to the Loom Frame

The first job was to add strength and rigidity to the E Model loom frame. Bracing by a cross girt was not enough. Often loomsides have been so worn or weakened by years of operation that other support is necessary.

Twenty years ago we made our first top girt to add strength to a loom frame. It was for a duck loom.

In April 1934 we made a single piece top girt for our X Series looms. Later we made one in three parts. It proved so much better it became regular construction for all our high speed looms.

New design for speeding up E Model looms includes:

A three piece top girt extending over the top of the loomside prevents the girt from moving out of place. The weight of the device rests upon the top of the loomside. It has positive joints between girt and girt ends and is placed near crank shaft to give positive support.

The girt ends cover 70 sq. in. of the loomside where it may have been weakened by wear.

Crank shaft boxes are supported by both loomside and girt ends, which are designed to allow for spring crank arms—an essential for high speed on E Model looms.

Heavy new cam shaft boxes, horizontally supported, are adjustable to allow proper meshing of driving gears without vertical fitting.

Floor supports for the top girt hold crank shaft center boxes steady.

This construction affords ample harness and yarn beam space; provides for easy cleaning; and may be made for grease or oil lubricant.

Extra construction calls for new outside bearings for belt or motor drive. They absorb drive thrust and have ample support for a larger motor. Tilting brackets may be supplied for K. A. electric stop motion.

Watch for other interesting new parts for our older models from this new Southern Development department.

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A

DRAPER CORPORATION HOPEDALE MASS

NUMBER 367 DECEMBER 1946

The Story of

A Loomfixer and a Shuttle

On June 30, 1946, Henry Lussier, Loomfixer, paused a few moments at the gates of the Naumkeag Steam Cotton Co.

His fellow workers crowded around to shake his hand and wish him Godspeed. Henry was retiring after 50 years of faithful service.

As he stood there his mind raced back through the years. Many of the pictures were blurred. He remembered only the good things—the helping hand—the kindly word.

He had seen the old give way to the new. New methods, new processes, new machines, new ideas, new standards.

Times had indeed changed. But he felt justly proud of his steadfast service through the years—of the skill he had acquired—of the part he had played.

Now he was looking forward to a few years of leisure. Now he could do the things he had talked and dreamed of doing.

A Wonder Shuttle

When Henry left the mill he carried with him a shuttle, a memento of his loomfixing skill. He wanted to show it to his family and friends. He was very proud of it.

It was a shuttle made by Draper Corporation and he had run it in a loom in his regular section of 90″ L Models.

This shuttle was in constant use for over nine years —from 1923 to 1932. An amazing and almost unbelieveable performance.

Our people roughly estimate that this wonder shuttle was in use 33,000 working hours. It was hurled across the lay a total of 205,920,000 times—traveling 412,755 miles—a record which probably will never be surpassed.

We are proud to present to you this all-time record of achievement in loomfixing and shuttle life.

Rules for Longer Life

Under present operating conditions with looms running at increasingly higher speeds, it is perhaps impossible to match such an outstanding record.

It does point the way, however, to longer life for the average shuttle and to reduce costs.

You can lengthen the life of your shuttles by making a study of the causes of shuttle wear in your weave room. Plan now to make a thorough investigation . . . the results may surprise you.

Carefully check all of your reeds. Be sure they are smooth and the dents uniform.

If the reeds are rough enough to shave the shuttle, discard them.

Make sure that the reed and back box plates are properly lined up. Use a full length straight edge. It must be long enough to cover the faces of both back box plates.

After lining up reeds and box plates, check both to make sure they are square with the shuttle race and lay end.

It would be an indication that one or more of these precautions has been omitted if the back of the shuttle shows a washboard effect.

May Christmas Peace
and New Year Joy
Be Yours

In continuous service
1923—1932

Not only the
"Shuttle of the Year"
but an all-time record

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
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DRAPER CORPORATION HOPEDALE MASS

NUMBER 368 MARCH 1947

A Chart For

Diagnosing Loom Troubles

For the Loomfixer

"Guide Posts to Increased Production," the serial story told in our trade paper advertising over the past seven months for overseers, second hands and loomfixers, has aroused intense interest among those for whom it was written. Requests for copies of the seven ads have been numerous.

They have sparked the industry's growing interest in good loomfixing, especially where mills have set up their own schools for fixers.

Good loomfixing is more than a routine job; more than replacing a broken part or tightening bolts and set screws; more even than being able to set all mechanisms according to the proper standard.

The ability to handle routine jobs is acquired in a fixers school or by personal instruction.

Other jobs, less numerous but of vital importance to successful operation of the loom, pose the problem of tracing to its real cause some defect in the woven fabric.

For this job the inexperienced fixer—and often his fellow worker of long time service—needs a warning and some form of material help.

Our Warning

Our warning—make it an addition to Guide Posts—is epitomized in the good old railroad sign: Stop, Look and Listen; and is exemplified in your family doctor's insistence upon a careful diagnosis before he begins to feed you medicines that may do more harm than good.

Draper service men, who are called in when a mill has difficulties with their looms, tell us that failure of the loomfixer to cure the trouble often has been due to applying the wrong remedy; *and that not infrequently his efforts have actually introduced other troubles.*

Your family doctor knows your cold or headache or rash may be an indication of something more serious. He asks you questions. He may put you under the care of a nurse or in a hospital for observation. Their reports enable him to make a diagnosis of your trouble—whether it is as simple as it appears or serious enough to call for special treatment. This diagnosis determines the doctor's chance of helping you.

The nurse has been trained to ask questions and make observations. The doctor relies upon her reports.

Your loomfixer must make both observations and the diagnosis. In all but routine repairs, he should take time to make them. Naturally he should have some form of material help, preferably a chart.

A Chart for the Loomfixer

We have recognized for a long time the need for a loomfixer's chart—not for routine jobs, which are taken care of in our setting instructions; but to guide him in analyzing and curing more complicated loom troubles such as those that develop defects in the fabrics.

But making such a chart should be the job of each mill. Its form must depend upon the model of loom, the particular automatic mechanisms of that loom and upon the defects likely to develop in the fabric being woven.

Some mills have made such charts. We have before us an excellent one made by a progressive Southern mill. It is in the form of a pocket-size booklet.

Each of its 14 key pages treats of a single weaving fault and lists from 15 to 29 things to look over when that trouble develops. In all there are 281 items.

The headings of the 14 pages are as follows:

Causes of jerked in filling, 29 items.
Causes of broken filling, 26.
Causes of sluggy filling, 18.
Lost production and seconds caused by Battery, 15.
Seconds caused by bobbin breakouts, 17.
Causes of thin places, 20.
Causes of wavy cloth, 25.
Seconds caused by Take-up motion, 17.
Seconds caused by Let-off motion, 21.
Seconds caused by Protection motion, 19.
Seconds caused by Pick motion, 19.
Overshots may be caused by, 22.
Seconds caused by Stop motion, 16.
Seconds caused by Dobby Head out of fix, 17.

With this outline as a starter, try making up your own chart. It will give you better loomfixing.

Pointers from Our Guide Posts

You can't get full efficiency of Draper High Speed looms without the best of loomfixing.

Organize your loomfixers under a supervisor who is a specialist, trained for the job and with the teacher's ability to instruct others.

He should watch the work as it is being done, see that the various mechanisms are correctly set and are kept correctly set.

He should see that each fixer has a book of Draper Standard Settings and uses Draper Gauges.

His is a one-man job—too exacting to be placed on the busy boss weaver or his second hand.

Have an adequate oiling and greasing plan. This, too, should be organized and directed by a specialist. Proper lubrication reduces costs.

Well prepared filling will give you more cloth and better cloth. Inspect filling at frequent intervals.

Modern Slashers and Sizing equipment with automatic controls enable you to turn out good warps consistently. They reduce loom stops, control quality and assist you in maintaining standards.

In a dry weave room, both warp and filling become brittle, loom stops are excessive and production falls off. An efficient humidifying and temperature control system eliminates loom stops from this source.

Finally we would add something pertinent to the expanded mills of today.

Small mill methods do not fit conditions in large weave rooms. Work must be more carefully watched. You must have more efficient organization and more trained assistants for the boss weaver. Greater efficiency is the needed offset to high wages and short hours.

COTTON CHATS
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DRAPER CORPORATION HOPEDALE MASS
NUMBER 370 SEPTEMBER 1948

Draper Research Based on the Know How and Know Why

Research is a magic word in modern industry. It must go hand in hand with invention.

Invention of better machines—like all worthwhile lines of human endeavor—is the result of imagination, the thoughtful and detailed working out of a practical application of what the imaginative and creative mind has suggested, assisted by the results of research Based on Accumulated Knowledge.

Accumulated knowledge is the foundation of the "know how" and "know why" of loom building. Nothing is more important to the mill that is buying looms.

The man who founded the Draper business, a man of inventive genius in many lines, made his most important inventions in the textile field. He had the accumulated knowledge—inherited from a long line of ancestors in every generation of which for 700 years there was at least one skilled weaver or fuller of cloth.

Ira Draper's sons who followed him in the business were educated in the know how and know why—in machine building and in textiles. They were successful textile mill men before taking over their father's business.

In early days, these men were their own inventors, but in the 1850's George Draper began to gather about him able inventors and experimenters. This was the beginning of the Draper research and development division.

With this organization, George Draper brought out many important devices for the common loom of his day and developed the great improvements in ring spinning, warping and spooling that marked the 70's and 80's and saved the textile industry many millions of dollars. Thorpe invented ring spinning. Draper made it the approved method of cotton spinning in America.

During the eight long years that preceded the advent of the Northrop automatic loom, this Draper organization engaged in the most intensive research—perhaps the most expensive ever indulged in by a machine builder up to that time.

Since then it has directed the development of the great number of improvements that changed that original automatic print cloth loom into today's complete line of high speed looms for practically every one-shuttle weave.

Draper Corporation's accumulated knowledge of loom building and loom operation has been and is today of tremendous value to the textile mills it serves.

In keeping with the Draper tradition, the men who have come into the business and are now associated in its management have had a thorough training in the know how and know why—in our shops or in a mill. They are competent to supervise and direct this big division of research and development.

They have added outside men with acknowledged competence in lines where we needed special help in getting results we were seeking—in physics, in chemistry, in plastics, in new metals, in modern machine design.

This enlarged division is equipped with everything needed to make its research and experiments effective—chemical laboratory, testing machines of many kinds, high speed cameras, slow motion

movies, the strobolite, the Heiland recording oscillograph and many other up-to-date instruments and facilities.

To aid in a practical approach to special problems, we have arrangements with outside engineering firms for their assistance in such highly technical fields as plastics and electronics.

Past achievements of our century-old division of research and development speak for themselves. Draper looms won world-wide acceptance on merit; and the basic design is now standard for all successful one shuttle automatic looms being built in the world today. Draper ever-available service to users of these looms has been notably helpful to our friends in the mills.

Acid Test of Something New

What of the future? We are looking forward. So are you. You want to know what we have on our planning boards; what you may expect at some not too distant day.

Research and development work must be carried on behind closed doors. You hear about it only when we get practical results. This takes time, for looms already have reached a high standard of economical production.

Something new is not enough. Promising experiments often prove successful from the research worker's viewpoint but end up in the waste basket. They fail to meet Draper's acid test. They will not add to the economy or quality of weaving.

Greater use of lighter metals is in everyone's mind today. They promise some advantages; but an automatic loom is a peculiarly complicated machine. Will they disturb its balance—proved requisite of high speed weaving—or introduce other troubles?

Will they reduce the price of the loom or the cost of its maintenance? Will they increase its speed or produce better cloth? Will they reduce labor?

This is where the know how and know why assist in research and experiment. The answers are vital to you.

Before the war we were busy on scores of projects for new devices and entirely new looms. This work was interrupted while

we engaged in developing and building needed war equipment. Since we resumed building looms, research and development work has been continued along the four lines previously laid down:

Improving the mechanisms of older loom models.

Constant betterment of our high speed models.

New type of loom.

Other fabric making machines.

Improving mechanisms of today's loom is our perennial job, but never have we been more intensely busy on this job than now.

Push button starting, electrical operation and control of several mechanisms, application of electronics, reducing vibration of reciprocating parts, light metal lays and use of new lighter metals for various parts, new picking and checking, new parallel motion to eliminate picker jump, let-off motions with fewer parts and uniform tension, yarn beams over 36″ in diameter, plastics for shuttles and bobbins as well as for some loom parts—these are but a few of our many research jobs that promise greater efficiency of present models of looms. And our research along these lines is proving helpful in planning for a radically new loom.

We are well along on plans for a fully engineered machine for making a 40″ cross laid web of unspun fibers.

New Loom to Come

But the new loom—the one that will weave fabrics in the form desired by man since the origin of the art of weaving—and do it faster and better than any loom ever invented—that is our supreme job.

Many men from many countries played with the idea of an automatic loom for a century. Draper research, with accumulated know how, produced one after eight years of labor. It took time. The new loom will take time. Part of that time has passed—with promising results.

A new loom is coming—others may come. We predict that the one that will produce cloth more cheaply than the present loom and still meet the exacting demands of the industry will be the product of men with accumulated knowledge of the know how and know why of weaving and weaving machinery.

COTTON CHATS

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 371 DECEMBER 1948

$2,500,000 for Increased Bobbin Output

The sudden and unforeseen expansion in the demand for textile equipment that came with the outbreak of war tested the capacity of all builders of textile machinery and disarranged all their plans for ordinary expansion. This was especially true in our bobbin department where the demand was suddenly stepped up beyond our normal output. This increased demand has not tapered off very much since.

The story of what we have done and are still doing to meet this increased demand will be of interest.

In the 12 years ending in 1940, excluding the three depression years of '30, '31 and '32 when shipments were sub-normal, we shipped an annual average of 14 million bobbins.

During '41 and '42, emergency wartime demand caused our shipments to nearly double. We met this unexpected expansion by extraordinary effort, but it sadly depleted

Roughing Mill At Tupper Lake

our supply of seasoned blanks. In fact it emptied our storage bins of the 15 million seasoned blanks which we had, for many years, maintained as the necessary backlog for operations at Beebe River. Reduced to working from hand to mouth, our bobbin output became dependent upon our monthly receipts of seasoned blanks.

Under wartime pressure, but as fast as conditions would allow, we started at once to increase our backlog of raw material and enlarge productive capacity of our shops. Continued effort in this direction has enabled us to ship 23 million bobbins during the past 12 months. This is progress but not all that our plans call for.

Meeting a Production Problem

When we were shipping 14 million bobbins annually during pre-war years, our 100 per cent capacity was 20 million per year, which then seemed sufficient to meet emergency demands.

With no seasoned bobbin blanks on hand after the explosive wartime demand had taken its toll, we had to resort to heroic efforts to insure needed production.

First of all we increased our dry kiln capacity to 750,000 blanks every eight days. If the kilns are run full time, the output will be rising 34 million blanks per year. Making allowance for waste in processing and the many inspections to which our bobbins are subjected, this will allow a yearly production of 27 to 28 million finished bobbins per year—double our annual shipments before the war.

To insure an abundance of stock for this increased capacity, we have been steadily adding to our holdings of standing timber. Our lumber lands now comprise more than 150,000 acres in Maine, New Hampshire, Vermont and the Adirondack section of New York. On some of these the soft wood has been cut off for pulp, leaving for our use the hard wood such as maple and birch.

New Bobbin Blank Mills

Before the war, our only facilities for preparing bobbin blanks were at our bobbin plant at Beebe River. These were inadequate to meet the new demand.

In 1942 we bought an idle woolen mill at Guilford, Me., and equipped it as a bobbin-roughing plant to handle the output of our forests in the Moosehead Lake section of that state. We have since built an entirely new shop at Guilford with double the capacity of the old mill. It went into full production in September, 1947.

The same year, 1942, we built a roughing plant at Woodford, Vt., for our Green Mountain output. This shop has been reequipped with new machinery that has doubled its capacity. It is now at full production.

After our purchase of extensive holdings of timber lands in the Adirondacks, we started building a sizable roughing plant at Tupper Lake. This is now coming into production, but it will not reach capacity until March or April. With full production at Tupper Lake, we will be able to produce at our new 100 per cent capacity of 27 to 28 million finished bobbins per year. Our shipments during 1948 will probably reach a total of 25 million.

Meantime our roughing plants have been equipped to supply boxes for packaging our products and some wooden parts for our looms. This has averted shipping delays due to postwar shortage of lumber. During the past year they have cut up over seven million feet of soft wood.

Cost of Post-War Expansion

Our investments in additional standing timber and these new shops and their equipment have amounted to a total of more than Two and One-half Million dollars since the outbreak of the war.

This is our POST-WAR APPROPRIATION for improvement and enlargement of our bobbin-making facilities alone.

COTTON CHATS

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NUMBER 372 APRIL 1949

1816-1949

133 Years of Progress

We believe that all our stockholders, customers and employees will be interested to see the development and scope of Draper Corporation operations. We take pride in presenting this issue of "Cotton Chats" which depicts the various units of the Corporation.

Draper became great serving the textile industry. The plants pictured herein enable us not only to maintain our service to the industry but also to meet the increased demand for our products.

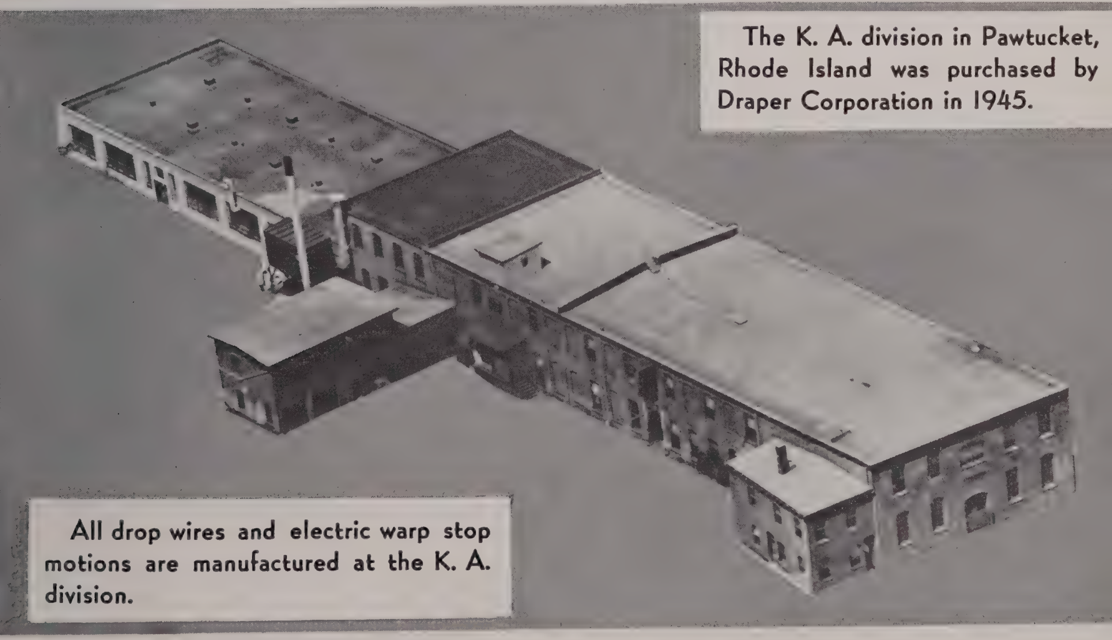
Hopedale - The Main Plant of Draper Corporation. On the opposite page the Main Office is shown along with the reception desk and an interior view of the office.

FRAMINGHAM FOUNDRY

The Framingham Foundry, acquired in 1944, is a necessary adjunct to the large unit in Hopedale. Originally a jobbing foundry, it is particularly well suited for handling large special castings, in addition to supplementing the production of the Hopedale foundry.

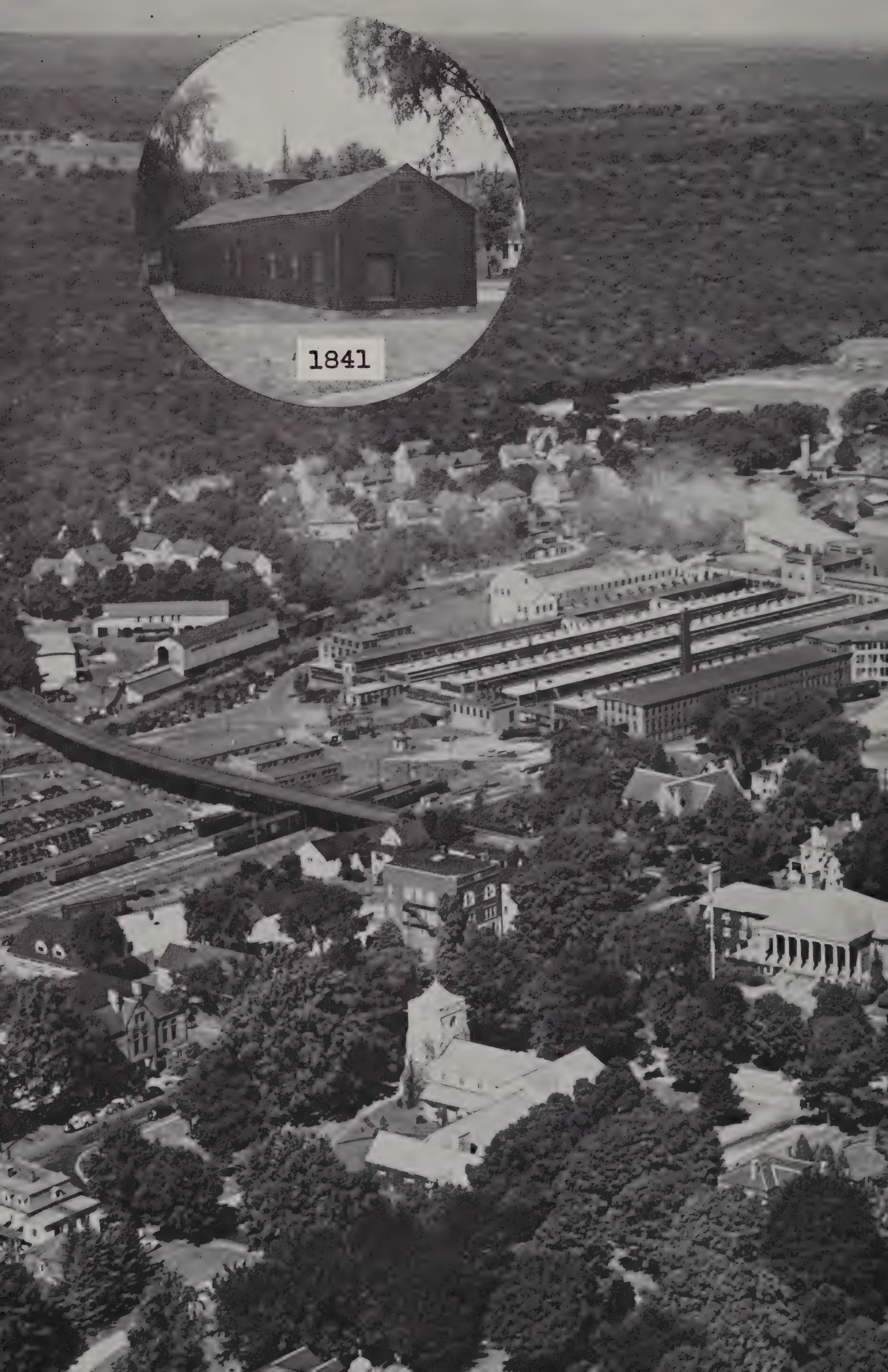
In the lower left we see the new charging system at Framingham. Almost completed it will replace the antiquated method heretofore in use, where pig iron and scrap was charged manually piece by piece.

PAWTUCKET



The K. A. division in Pawtucket, Rhode Island was purchased by Draper Corporation in 1945.

All drop wires and electric warp stop motions are manufactured at the K. A. division.

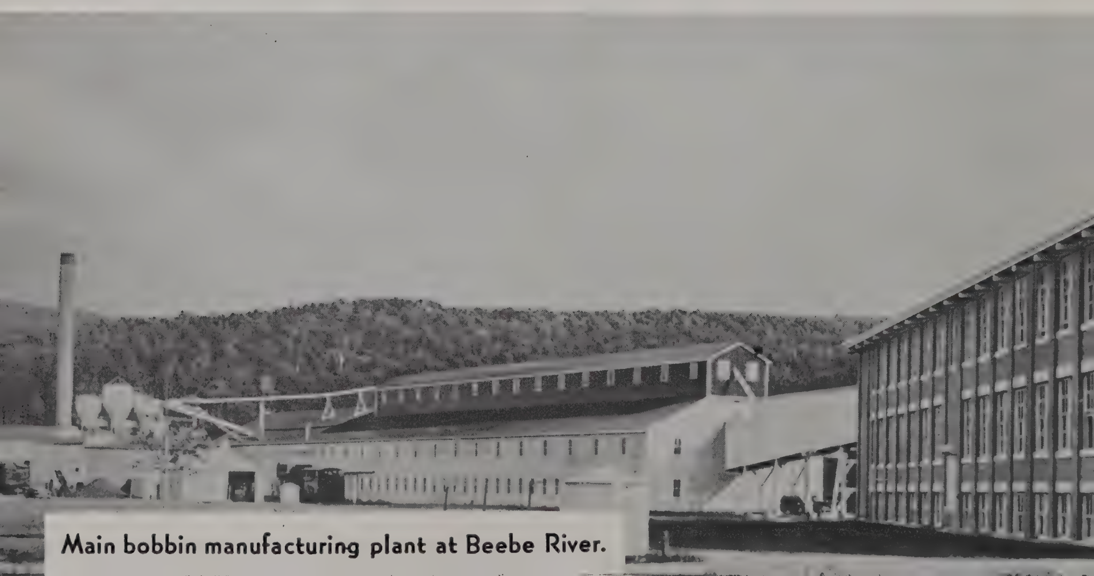

1841

Located in the New England town of Hopedale, Draper Corporation is situated on the banks of the mill pond from which it originally drew its power. In the background we see the new baseball diamond, Draper Field; in the foreground the Community House and other community buildings.

BOBBINS

TUPPER LAKE, N. Y.
ROUGHING MILL

WOODFORD VT.
ROUGHING MILL



Main bobbin manufacturing plant at Beebe River.

BOBBINS

GUILFORD MAINE
ROUGHING MILL

BEEBE RIVER, N. H.
LOG POND

Atlanta

When the South became the center of the textile industry, Draper Corporation opened offices and warehouses in Atlanta, Georgia in 1906 and in Spartanburg, South Carolina in 1929 the better to serve its customers.

Spartanburg

The increased demand for our product was such that a foundry and machine shop was opened at East Spartanburg in 1935 to expedite delivery of repair parts to Southern mills.

East Spartanburg

SHUTTLE BLOCKS

Due to the difficulty of obtaining shuttle blocks in sufficient quantity, the plant at Biltmore, N. C., was opened in 1946 in the heart of the dogwood country. Logs from over 35 small sawmills are trucked to Biltmore for processing.

BILTMORE, N. C.

LENOIR, N. C.

WIGGINS, MISS.

OFFICE AND ROUGHING MILL AT BILTMORE

COTTON CHATS

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NUMBER 373 MAY 1949

Modern Draper Shuttles With New Series of Eyes

Now that we have been able to get back to pre-war quality in our shuttles, we wish to express our sincere appreciation of your acceptance of the product we were compelled to supply during the war and for some of the time thereafter.

These wartime shuttles were not a willing product on our part. They were forced by shortages of materials—in the wood from which the body of the shuttle is made and in the metals from which the fittings are fashioned.

War-directed use of shuttle-eye bolts with rolled threads and steel nuts that failed to hold the eyes for any reasonable time was most embarrassing to us.

These and other inferior fittings are now all back to pre-war quality. We are again turning our own shuttle bolts from alloy steel rods. They have precision-cut threads, hardened and plastic-coated for better holding, and are again fitted with brass nuts.

Our Dogwood Supply

We were handicapped by a shortage of dogwood.

Because of the wartime shortage of Southern help, firms that had supplied us for years with dogwood were unable to maintain regular shipments. Our backlog of 1,350,000 conditioned shuttle blanks, steadily maintained for years, quickly fell to 250,000 blanks. This forced us to a hand-to-mouth basis in filling shuttle orders.

We were forced to use persimmon on some orders.

In the emergency we developed a process of making laminated blocks from small-sized dogwood.

The dogwood we were able to get for regular blanks was hurriedly conditioned, and sometimes the wood shrank and failed to hold the spurs.

As soon as conditions permitted, we set up our own supply organization with more than forty contributing sawmills in various southern states and a concentration plant at Biltmore, N. C.

This new system is working well. Our backlog of dogwood at Hopedale now is always sufficient to allow ample time for proper conditioning. The quality of our shuttle blanks is better than ever before.

Note the finish of these new shuttles on the next lot you receive. They are smoother around the eye and other fittings. Texture of the overall finish is firm and smooth. New machines and improved expert handwork, developed by research, made this better finish possible.

Research Produces New Shuttle Eyes

We have developed an enamel for cast iron eyes that has better color. We aim to make it harder and smoother.

Newly developed shuttle eyes for both cotton and rayon will improve your weaving. Many of these eyes are interchangeable in the same shuttle, making possible a saving in shuttle cost on a change of weave.

No. 340 is a mill-tested cast iron eye with scroll designed to fit any shuttle with the 183-X eye, of which it is an important improvement. Its milled front hook, improved threading point and more room in scroll chamber insure better threading and more positive retention of the yarn in the eye. We have sold 200,000 of No. 340 in the past year. They have proved most satisfactory.

A single-piece cast iron eye, No. 347, will replace either of the above eyes. Instead of the steel scroll, it has two horizontal thread slots below the retaining hook. Being single-piece, many mills prefer it.

For those who want to change from an 8″ bobbin to 8 3/4″ in the same size shuttle and thus escape making other changes on the loom, we have eyes shorter than the regular eyes to prevent choking the filling in weaving off. The shorter eye with scroll is No. 346, and No. 337, is the single-piece eye. They fit the old shuttles.

We do not advocate this change, but we have these eyes for mills who want to adopt it.

When shuttles are ordered with bristles, we supply china bristles. For most weaves they give best service. We furnish nylon or horse hair if desired.

For shuttles with long bobbins, 8 3/4″ and over, we have a spring cover fastened by two through bolts to hold the heavy yarn package firmly.

For Filament and Spun Rayon

We have new and improved first-pick tension eyes for silk and filament rayon; and proper eyes to replace either of them when you change to spun rayon. The new first pick tension eyes are No. 325 for narrow shuttles and No. 286 for wide shuttles. The eyes for spun rayon are respectively No. 336 for a change from No. 325 and No. 331 in place of No. 286.

Nos. 325 and 336 will go in shuttles where you now have No. 317 or No. 319; No. 286 has no older form.

Shuttles for C & K Looms

For Crompton & Knowles looms we have an attractive group of shuttles. They are usually fiber coated, with low thread groove, first pick tension eye, steel flange nut and steel thread cutter plate. Since box looms are hard on shuttle spurs, ours are always pinned in place.

The tension slot of the eye in wide shuttles is set at an angle, which is reversed in eyes for hard twisted reverse wind filling. An eye shield, provided if ordered, will aid in holding the yarn in the eye. Where the pad slot is vertical, as in narrow shuttles, the wall of the shuttle is shaped to cam the yarn into the eye.

Hints on Care of Shuttles—Have a regular time for tightening all screws and bolts. Use screw drivers that fit slots in screw heads.

We turn all shuttle bolt threads ourselves. They are heat-treated. Avoid ordinary commercial bolts, which will not give you equal service.

Where steel flange nuts are used on eye bolts, the plastic-treated bolt threads hold so well at times that the bolt breaks when loosened to remove the eye.

A contributing factor to loosening spurs is a worn spindle hole in pickers on box looms. Another is the gradually increasing hardness of rubber pickers caused by the commendable effort of the picker manufacturers to increase picker life. However, the picker men have been co-operating in their efforts to provide a more resilient picker without sacrificing too much in picker life.

Some rubber pickers stiffen with age. If you have stored any for a long time, check them for resiliency.

We are setting up a system to get out sample lots of shuttles more promptly. If you are changing yarn or styles and need a different type of shuttle, try us on a sample lot. We will get it out promptly for trial in your looms.

COTTON CHATS

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NUMBER 8 (S) JUNE 1949

DRAPER APPRENTICE SCHOOL

Mr. Fred Hullah and his secretary Eileen Sullivan in the School Office.

"Learning By Doing"

For centuries the skill and knowledge of a trade were passed along from father to son. As time progressed the master craftsmen of each trade joined together to form Guilds. To perpetuate their knowledge, they took a certain number of apprentices each year. These apprentices after years of training, of learning by doing, eventually became masters themselves. With the advent of the Industrial Revolution and its many great inventions the master craftsmen lost their hold on manufacturing, for mass production was the keynote of industry. Mass production is specialization. It teaches a man to do one job as quickly and as well as possible. However, because

of this basic fact, an overall knowledge of the field is not necessary and the years and years of apprenticeship, that were so essential, are now eliminated.

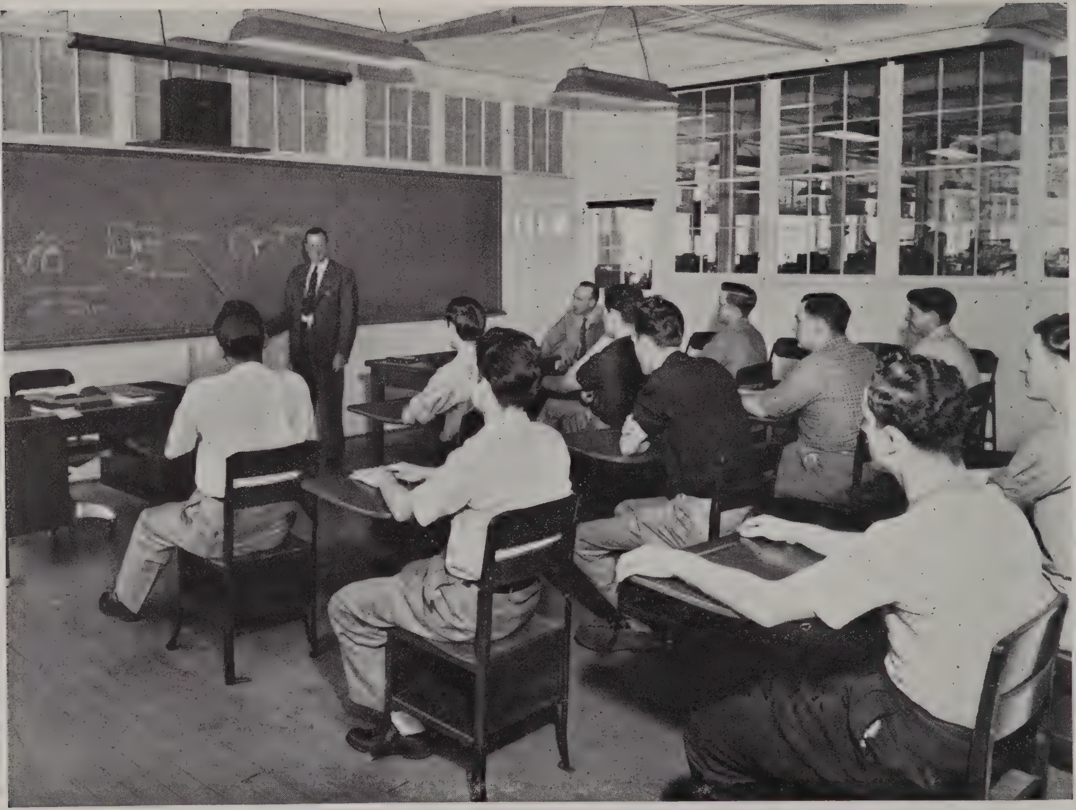
Nevertheless the needs of modern manufacturing call for certain groups of men who have an understanding of the practices and theory of a whole trade. These men must be taught to think along the correct technical lines and must be able to transmit to their hands and machines the information gathered by their trained minds.

Draper Starts a School

Draper Corporation, realizing the necessity of having a reserve of skilled men who know their trade, started an Apprentice School in 1940. Then because of the all-out effort required by World War II and the resulting shortages of man power and materials, the school was closed until October 1948.

At that time Mr. Fred Hullah and his assistant, Mr. Albert Anderson selected a group of twelve apprentices with great care. The requirements are high. Each man must fall in the 17-21 age group. Intelligence tests, set up by the nation's top psychologists, are given to determine each man's capabilities and interests. High school graduates are preferred, but exceptions are made in unusual cases. Sons of Draper Corporation employees are given preference. In the present class of 12 apprentices, seven have fathers in the plant.

A location next to the Gear Department was chosen for the school. Two offices, a classroom, a drafting room, a machine room, and a tool crib were built. A complete complement of machine tools was purchased and set up. These machines include: 2 - 14″ Lathes, 3 - 12″ Lathes, 1 - Universal milling machine, 2 - Vertical milling machines,



Mr. Hullah instructs a class in the Theory of Cutting Tools.

1 - DuAll band saw, 2 - Drill presses, 1 - 16″ shaper, 1 - Surface grinder, 1 - Disc grinder, 1 Cylindrical grinder, 1 - #4 turret lathe, 1 - Heat treating furnace, 1 - Automatic screw machine, 1 - Tool and cutter grinder.

Theory as Well as Practical Experience Essential

Since a proper balance must be maintained between theory and actual practical experience, the schedule, made out by Mr. Hullah, calls for 18 months in the school and 18 months in the plant itself.

The first period is divided into two parts—classroom study and practical experience in the school's machine shop. Classroom work includes Mechanical Drawing, Shop Mathematics, Sketching, Trade Theory and Design. The classroom is equipped with both motion picture and

slide projectors that supplement the lectures given by Mr. Hullah. There is also a fine library of technical books and magazines from which reading assignments are handed out from time to time.

The apprentices are taught to read a blue print correctly and then are given a course in mechanical drawing. The mathematics courses are designed to fit in with the other courses and go through geometry and practical trigonometry which are used to solve shop problems.

In the School machine shop the apprentices are taught to operate and set up each machine. They learn the correct speeds and feeds to use under different conditions and they learn by doing. Each apprentice is given certain pieces to machine, each piece a little bit more difficult than the one before. Since much of the work is for the

A class in Mechanical Drawing.

The lathe section on the right, a workbench and tool kit for each student on the left.

Experimental department, there are no jigs available and the apprentice must learn to make his own set-ups and layouts, which is valuable training. Many tools for the various departments in the plant are also made in the School machine shop. In the background keeping an eye out for errors and always willing to help, stand Mr. Hullah and Mr. Anderson. Incidently the quality of the work turned out by the Apprentice School has been praised many times.

Both oral and written examinations are given periodically on the homework and reading assignments, the lectures, and on the machine shop practice, not only to show that the student is learning the correct things but also to help straighten out various points in his own mind.

Records are kept of his marks, his attendance, the hours he has spent in each type of study, and of the hours spent on each machine. Thus the apprentice's standing and progress can be easily checked at all times.

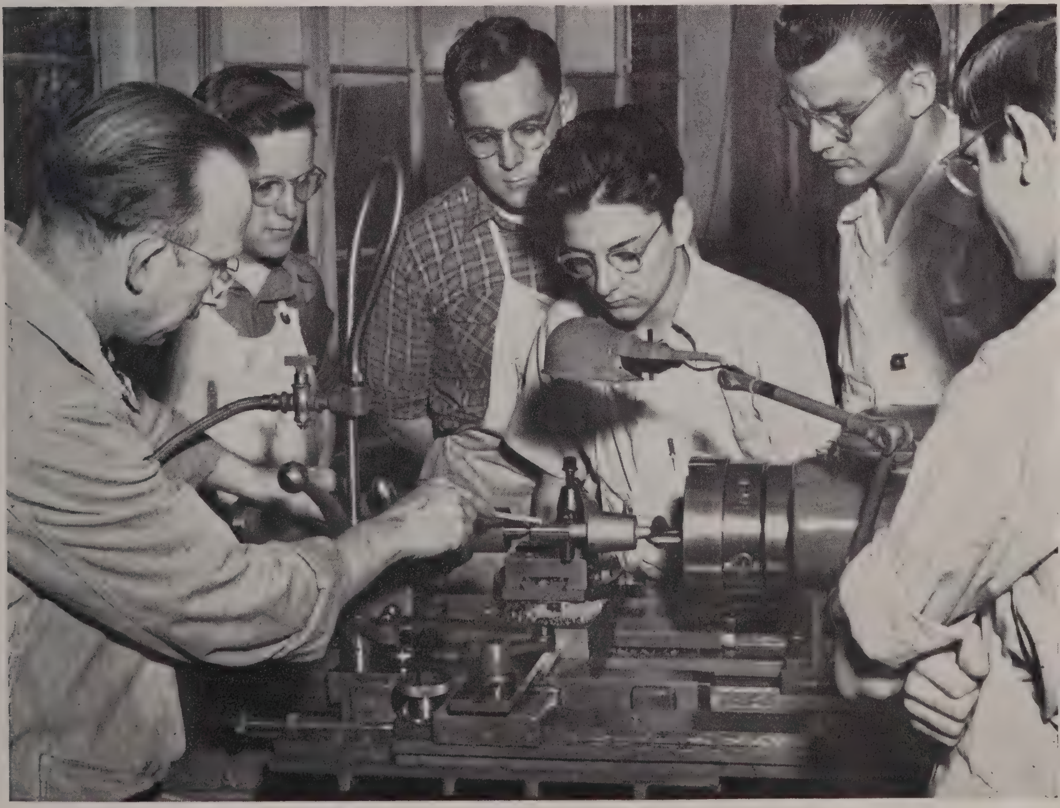
The first six months of apprenticeship are a probationary period during which time the apprentice is given every chance to prove himself fit for further training.

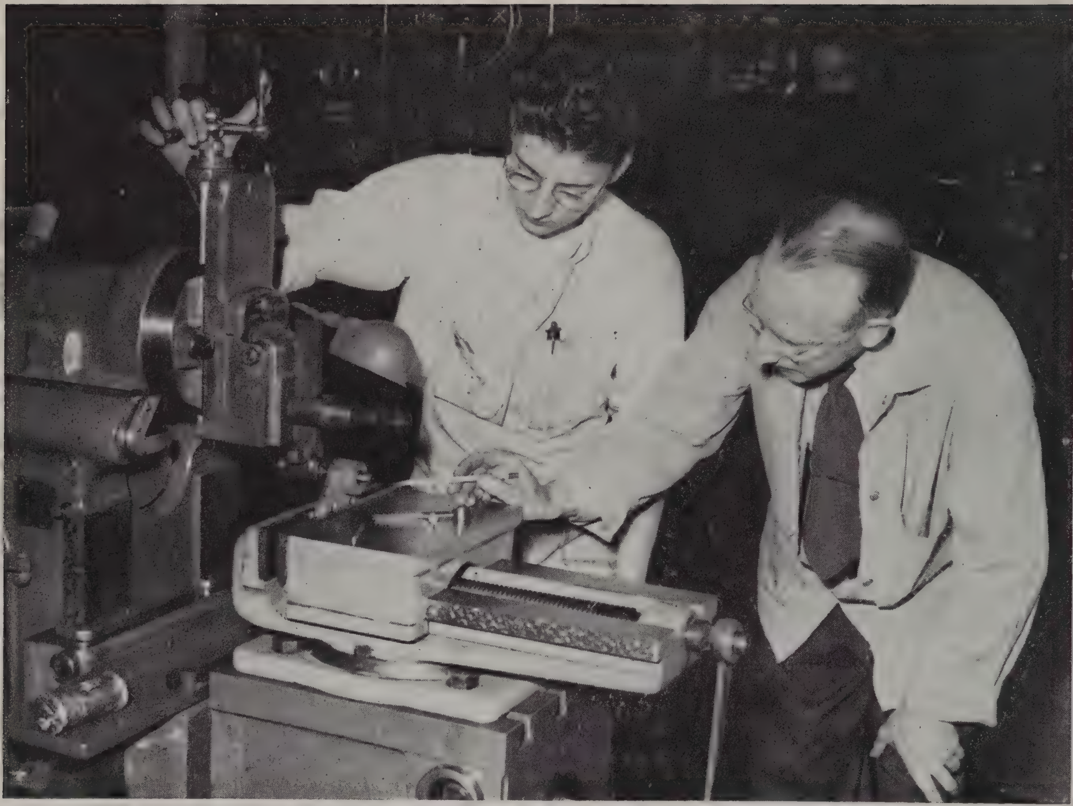
There are different requirements for each of the different trades taught—Foundry, Toolmaker, Maintenance, Machinist, Metal and Wood Patternmakers, and Draftsmen, but each apprentice receives a good general education before he specializes.

Further Practical Experience in the Plant

After the first 18 months—and the apprentice has learned how and what to do, he spends the remainder of

Mr. Anderson shows a class a lathe set-up.

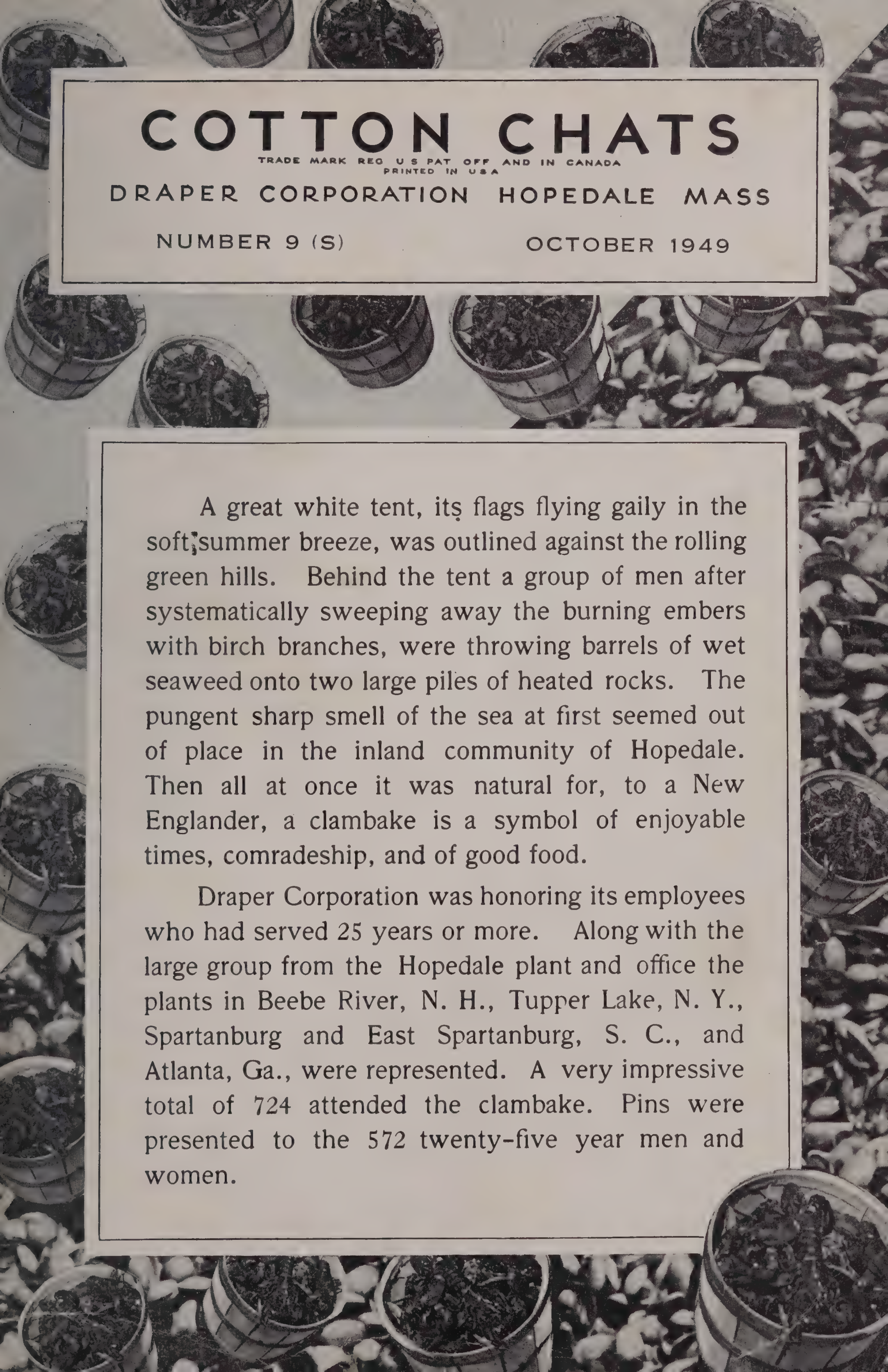




Mr. Anderson demonstrates the correct use of the shaper.

his three years in the various departments of the plant that have to do with his trade. Here he works beside a skilled machinist, or foundryman, or draftsman. The subjects learned in the classroom are now put to good use. The apprentice becomes acquainted with every phase of his chosen trade.

At the end of the three years the apprentice is given a diploma and takes his place on the team of skilled journeymen. He has the "know-how" to carry out his job. It has been a long grind but well worth all the hard work.



COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A

DRAPER CORPORATION HOPEDALE MASS

NUMBER 9 (S) OCTOBER 1949

A great white tent, its flags flying gaily in the soft summer breeze, was outlined against the rolling green hills. Behind the tent a group of men after systematically sweeping away the burning embers with birch branches, were throwing barrels of wet seaweed onto two large piles of heated rocks. The pungent sharp smell of the sea at first seemed out of place in the inland community of Hopedale. Then all at once it was natural for, to a New Englander, a clambake is a symbol of enjoyable times, comradeship, and of good food.

Draper Corporation was honoring its employees who had served 25 years or more. Along with the large group from the Hopedale plant and office the plants in Beebe River, N. H., Tupper Lake, N. Y., Spartanburg and East Spartanburg, S. C., and Atlanta, Ga., were represented. A very impressive total of 724 attended the clambake. Pins were presented to the 572 twenty-five year men and women.

Mr. Thomas H. West, Draper President, in a short talk after the "bake" expressed the Corporation's appreciation of the loyalty of its long-time workers. He also outlined the many benefits that the Draper Corporation shared with its employees.

Mr. West, (lower right hand corner) holds up one of the 425 lobsters. Also consumed were 85 gallons of clam chowder, 17 barrels of steamed clams, a tremendous number of fried chickens, and all the "fixings."

During the "Bake"
the Happy Diners
told stories and cracked jokes
in the delightful spirit of
comradeship that is typical of
Draper gatherings.

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
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DRAPER CORPORATION HOPEDALE MASS

NUMBER 375 JANUARY 1950

Recent Developments for Old and New Looms

Up to a limit, weaving costs can be decreased by running larger sets of looms per weaver. With weavers operating as many as 100 looms on certain weaves, that limit is being approached. Therefore we must be alert for new ways to cut costs and increase production. Through intensive research, Draper Corporation has brought out a number of new developments that frequently enable a loom to be speeded up without increasing maintenance costs and with full preservation of quality. Thus, more top quality cloth is produced per loom. Other developments have cut down handling and up-keep costs of various kinds.

High-speed Troubles Decreased

Let us first consider the high-speed part of the story. A substantial increase in speed naturally causes increased

vibration and accelerates metal fatigue. Also high speed on old looms was a handicap in weaving first quality cloth. Thus in order to speed up the older looms Draper engineers developed a top-girt similar to the one used on our high-speed looms to strengthen the loomsides. As this girt has large bearing surfaces, it provides for an extremely rigid bracing construction between the two loomsides. New type crank shaft boxes on the top-girt are not affected by vibration and therefore cannot get out of line to bind the crank shaft. Spring type construction of crank arms, which are generally considered a necessity for high speeds, should be used in conjunction with this top-girt. Because so much of the shock of a bang-off is taken up by the sturdy springs of the crank arms, breakage of loomsides and other parts is greatly reduced.

Handling Costs Cut Down

In order to cut down handling costs, larger shuttles were developed which naturally carried larger filling packages. Warp beam heads grew larger to cut down warp changes. These larger warp packages reduced slashing, drawing-in, and warp handling costs. Production was increased because looms had less down time due to warp changes.

The Draper Overhead Beam

As beam heads grew larger, the space each loom occupied in the weave room increased. The answer seemed to be an overhead beam installation. This would enable a mill to adopt the large yarn beams without sacrificing the number of looms in a weave room, since a loom with a 32″ beam in the overhead position occupies the same floor space as one with a 22″ beam in the conventional position. Developed for the X-2, X and E Model looms, the 32″ overhead beam holds 120.6% more yarn than the 22″ beam. Think what this means to your

mill: longer runs for warps and less down time for the looms, with consequent cost reduction.

Certain weaving conditions are improved because, with the overhead beam installation, warp stretch is increased and warp jumping, due to worn bearings is eliminated. Warps are kept clean because they are high above and away from nearby looms when the standard blowing-off system most mills employ is in operation. Since the beam is above the loom, the underneath parts are more accessible for the loom fixer. Due to the additional weight and the bracing construction, rigidity is increased, resulting in a steadying affect on the loom itself.

One disadvantage is that an overhead monorail system is almost a necessity, but when the overhead beam is used in conjunction with a monorail, the loomfixer's job of putting in the beam is greatly simplified. Piecing up inside presents a problem to the weavers until through experience, they have learned the proper motion procedure. The overhead beam installation seems to be the answer for coarse gray goods especially.

Clock Spring Top

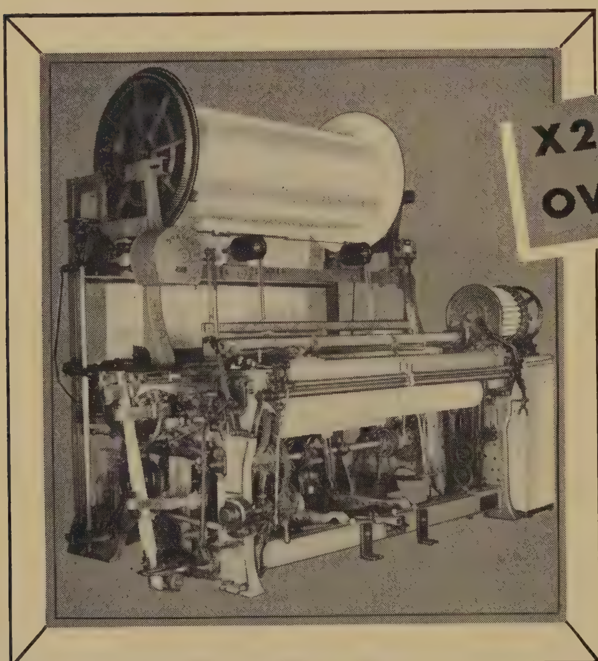
For another new development, Draper Engineers incorporated the design of a clock spring into a new top motion. Continually expanding and contracting, a harness spring takes the same kind of punishment as a clock spring. Extensive trials have confirmed the soundness of this design. One mill reported that after five years on heavy fabrics, spring breakage was negligible. Since it is enclosed, the clock spring top is clean. Because of easier action and less strain, this top substantially reduces wear on all top motion parts and harness cams.

Light Weight Metals

The use of light weight metals, such as aluminum and its alloys is another cost-saving medium that is being

continuously studied. An extruded section aluminum lay, which may be specified for new looms is now an available construction on X-2 Models. This new lay insures uniform shuttle flight. Bowing of the wood lay due to changes in atmospheric conditions is eliminated by the use of the extruded aluminum lay.

Thus through continuous and intensive research, Draper Corporation engineers are endeavoring to improve and to develop further, looms that already lead the world in high-speed production of top quality fabrics.



X2 LOOM-with OVERHEAD BEAM

★ *32" Beam holds 120% more yarn than a 22" Beam!*

★ *Cuts Slashing Costs!*

★ *Decreases End Waste!*

See this loom, along with other new important developments at the American Textile Machinery Exhibition in Atlantic City, New Jersey, May 8 - 12, 1950.

COTTON CHATS

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 376 MARCH 1950

The New Draper Foundry— Mechanization At Its Best

The Draper Foundry in Hopedale is one of the most modern in the world. The largest grey iron foundry in New England, it has recently been equipped with the latest conveyor systems throughout and this model installation has enabled us to increase greatly our production of castings.

We hope that all of our employees and customers will enjoy reading the pictorial story of the processing of cast iron in our foundry. It is the story of the heart of Draper Corporation because almost every operation performed in our machine shops depends upon the quality of the cast iron.

Pig iron and scrap comes into the building in railroad cars and is unloaded by an overhead crane carrying an electro-magnet.

The charge — precise weights of pig iron and scrap — is deposited in the scale hopper shown in the background, assuring the complete control necessary to produce the highest grade cast iron. This hopper opens up and drops the mixture of iron and scrap into a huge bucket on an automatic car. The car stops under coke and limestone chutes where a predetermined weight of each completes the charge.

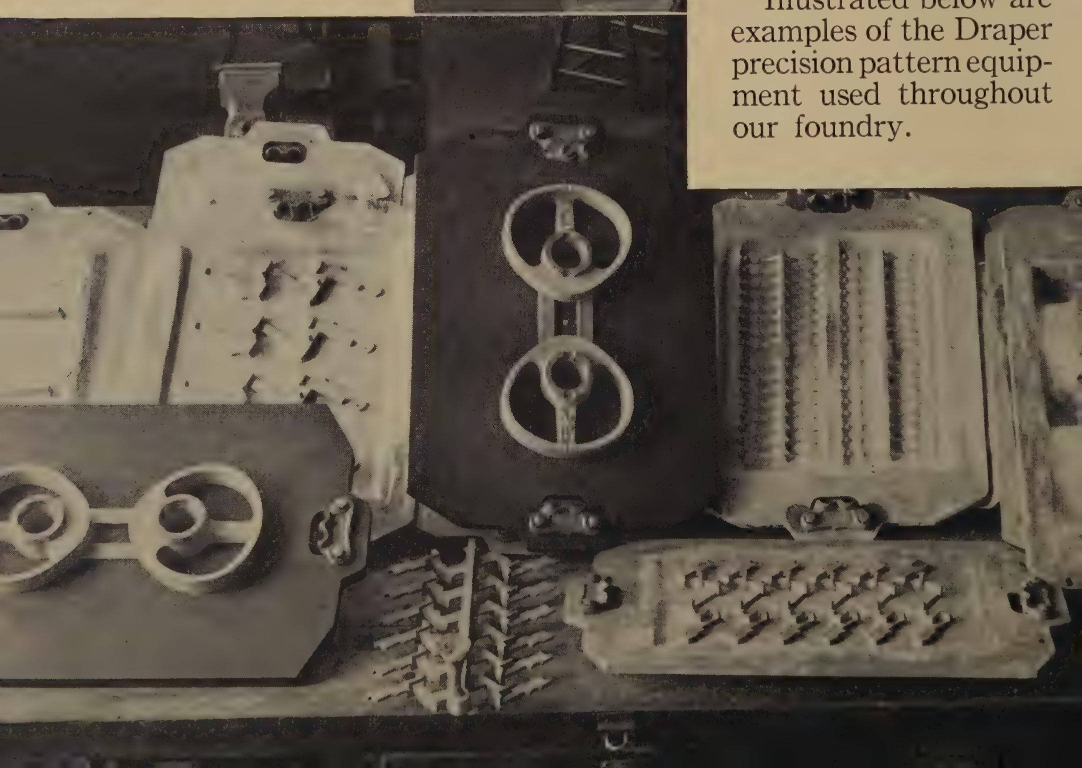
The large bucket is then carried by the car to a spot where an overhead crane picks it up and dumps it into one of the ever-hungry cupolas to be melted.

The liquid red-hot metal flows down into the large receiver from which it is poured into the "bulls" and ladles.

The pouring-off section of the twin-loop conveyor system is pictured above. The molten metal from the big receiver is carried by ladles on an overhead monorail system and is poured into the sand molds shown on the cars. In the left foreground is a locomotive for one of the trains. These trains take the molds from station to station in the loops.

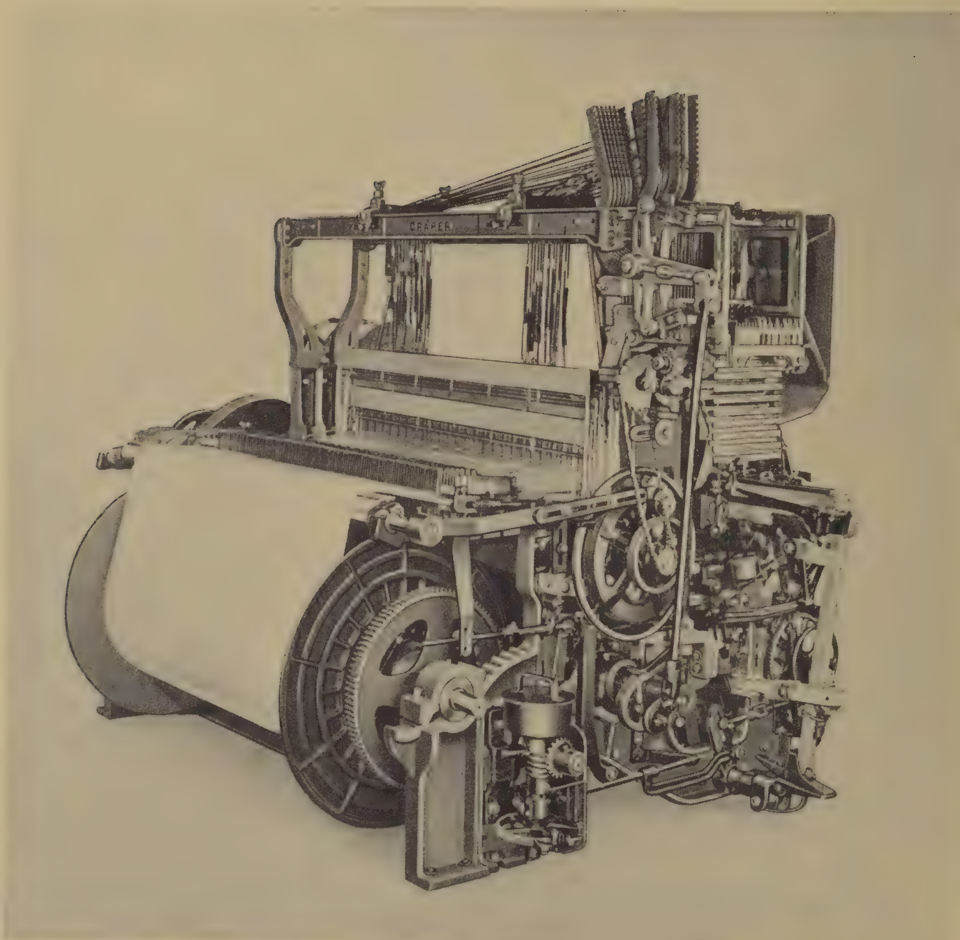
The Molders must work at top speed as the train only stops behind them for 6½ minutes to receive their molds.

Illustrated below are examples of the Draper precision pattern equipment used throughout our foundry.



Large molds are poured off as they roll down to a chute that dumps them on a conveyor belt to cool off. Empty flasks return on the reverse rollers.

Large castings are cleaned by a high pressure blast of sand. Small ones are placed in special machines for cleaning.



The Draper XD loom, famous for its production of rayons, nylons, and fine cottons, is the result of good iron. Without good iron, the most careful machining and assembly is useless. By continuous control of the melt, a team of chemists, physicists, and expert foundrymen make sure that Draper iron is the best.

COTTON CHATS

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 376 APRIL 1950

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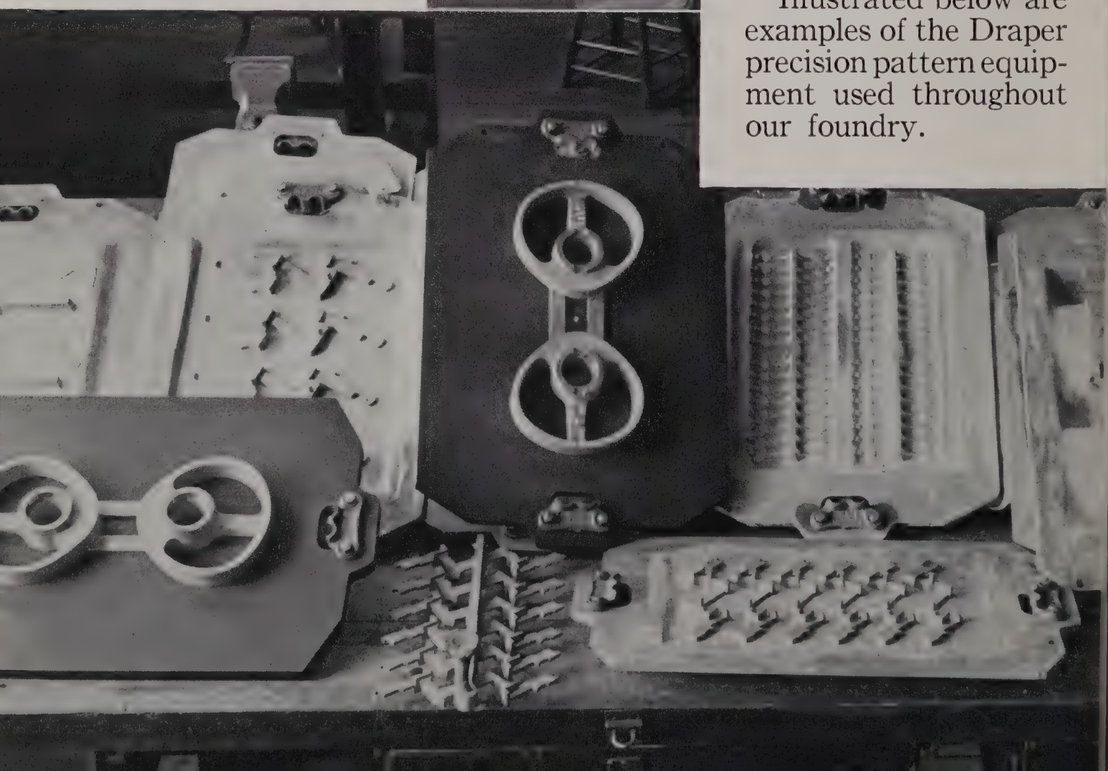

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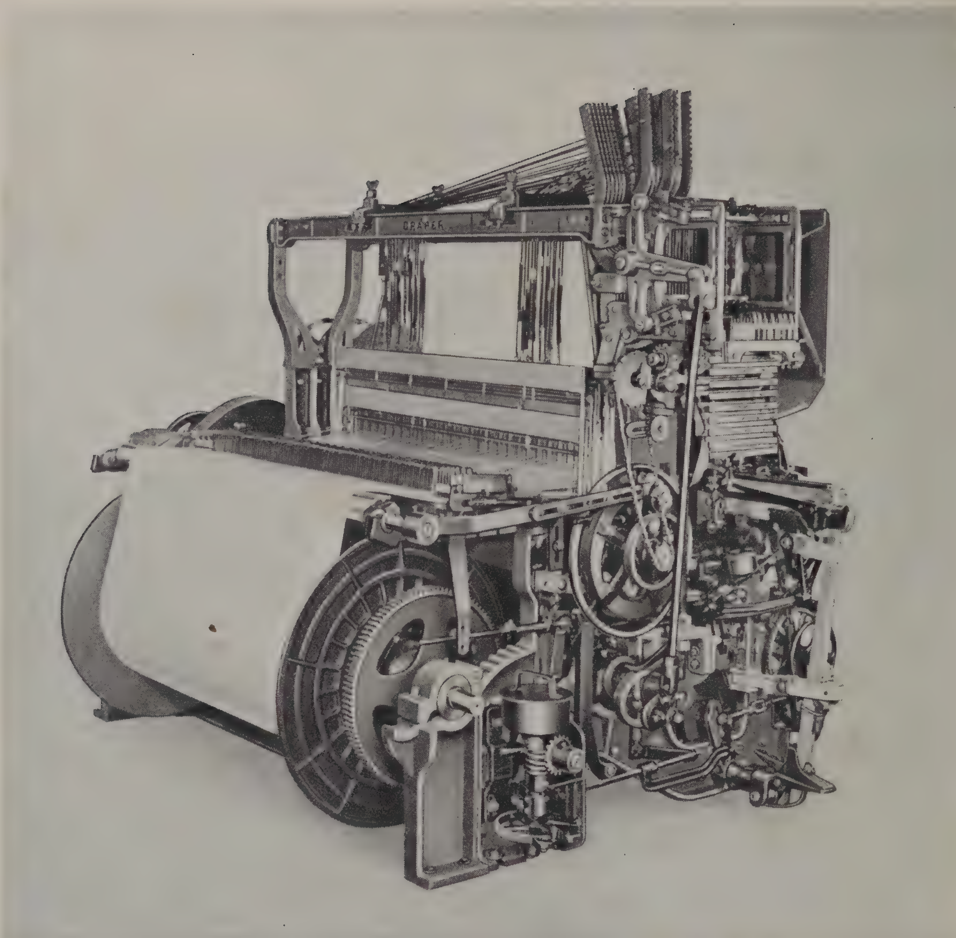

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 378 AUGUST 1950

Two Important Draper Developments for Spinners and Weavers

At the recent Textile Machinery Exhibition held in Atlantic City, New Jersey, mill men from all over the world crowded the Draper Corporation exhibit to see our latest looms and cost-cutting devices. Among the items that provoked much comment were the #1 Spinning Frame Builder Motion and the Draper-Diehl Power Transmitter.

#1 Spinning Frame Builder Motion

The #1 Spinning Frame Builder Motion is an automatic builder motion that makes it unnecessary for the operator to watch the frame continuously in order to stop it when the bobbins are full.

With this Builder Motion, the feeler bunch is built exactly to the desired yardage and width. The possibility is thereby eliminated of putting several extra turns on the bobbin step above the bunch which very often causes the Midget Feeler to operate improperly.

The position of the service package with respect to the feeler bunch is controlled exactly. This feature is especially valuable with coarse yarn as it decreases loom stops caused by filling breaks. Often the build-up of the feeler bunch is such that, when the service package is put over it, some yarn must run up and over the bunch. This condition can cause filling breaks and is eliminated by the exact control of the position of the service package by the #1 Builder Motion. The package can be built to any desired diameter and taper.

Uniform packages of uniform yardage are possible as the height of the build on each set of bobbins can be accurately predetermined. It is difficult for doffers to "short-doff" a frame because the ring rail is automatically lowered and locked in the doffing position as the frame knocks off. The bobbins are then ready to be doffed with or without slackening the ends, according to mill practice.

When the frame is started up again the motion has reset itself automatically and manual rewinding of the rack is eliminated.

A bunch can be built in varying sizes on the bobbin tip, if your mill so desires. Since the battery hands do not have to look for the ends on the bobbins, the use of a tip bunch speeds up the work of battery hands by as much as 30% according to time study reports.

The #1 Builder Motion can be used with filling, warp or combination wind.

At present this motion can be applied to any Whitin frame built after 1898, Saco-Pettee frames with shipper rod or electric controls built since 1909, and all Saco-Lowell frames.

Investigate the Draper #1 Spinning Frame Builder Motion to cut your spinning and weaving costs.

Draper-Diehl Power Transmitter

Diehl Manufacturing Company and Draper Corporation have developed a new loom drive. It is adapted from the Diehl power transmitter used on heavy industrial sewing machines. Available at present only on the X-2 Model loom, it is a complete power package consisting of high-inertia motor, clutch, and brake combined in a single unit. In the near future the Transmitter will be available for other models of looms.

This new drive is mounted directly on the outside bearing support eliminating the motor stand and making a more solid anchorage for the power transmitter.

Since the major parts of this drive are in one complete unit, the unit can be replaced by another easily and quickly in case of a failure of the brake, clutch, or motor. The interchangeability of units means decreased loom down time and results in increased production and lower fixing costs.

When for some reason it becomes necessary to change the transmitter gear (the equivalent of the disc friction gear on the conventional drive) one merely unscrews four screws, takes the transmitter gear assembly off a tapered bushing, puts the new assembly over the bushing and tightens the four screws. Time and effort are cut to a minimum.

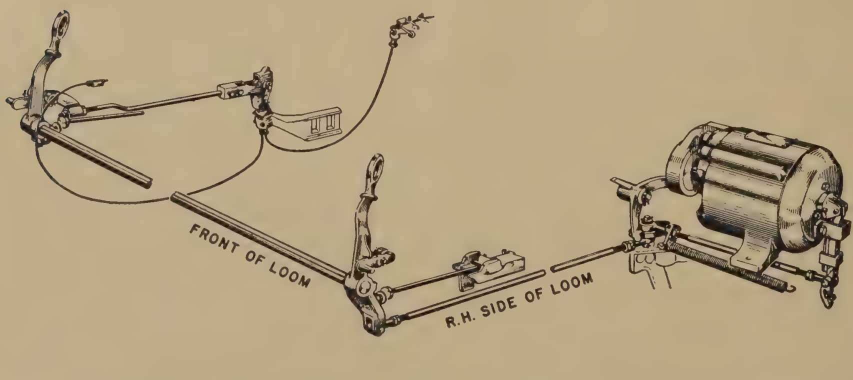
The cork friction clutch gives a positive drive with no slippage. Both the clutch and brake can be easily adjusted without removing the transmitter unit from the loom. The brake and clutch are smaller and lighter than regular construction because of the lower torque requirements on a high speed shaft and are therefore easier to shift. Because of the design the brake and clutch releases quicker at bang-off time.

One of the major advantages of the Draper-Diehl Power Transmitter is its simplified construction. Since the motor, clutch, and brake are enclosed in one unit, many of the parts of the conventional loom drive have been eliminated. Less parts and simplified construction mean a saving in fixing costs and costs of repair parts to be carried in the stock room.

The simplified shipper linkage eases the shipper motion to such an extent that a simple flick of the finger on the shipper handle is sufficient to start the loom. Time and motion studies have proved that using a light shipper handle to operate a loom is more efficient, easier, and faster than any other method—even a push button.

The transmitter drive will immediately show power economies as compared with standard loom motors. The transmitter construction incorporating a high-inertia rotor with suitably designed windings eliminates regeneration and reduces power surges, thus cutting down on motor losses.

Extensive Draper and mill trials have proved the design of the Draper-Diehl Power Transmitter sound and efficient. It will cut your costs for power, loom fixing, and repair parts and will give you increased production.



Outline drawing of the Draper-Diehl #2 Power Transmitter used, in this case, with the mechanical warp stop motion. Drawing shows the simplicity of this drive.

COTTON CHATS

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DRAPER CORPORATION HOPEDALE MASS

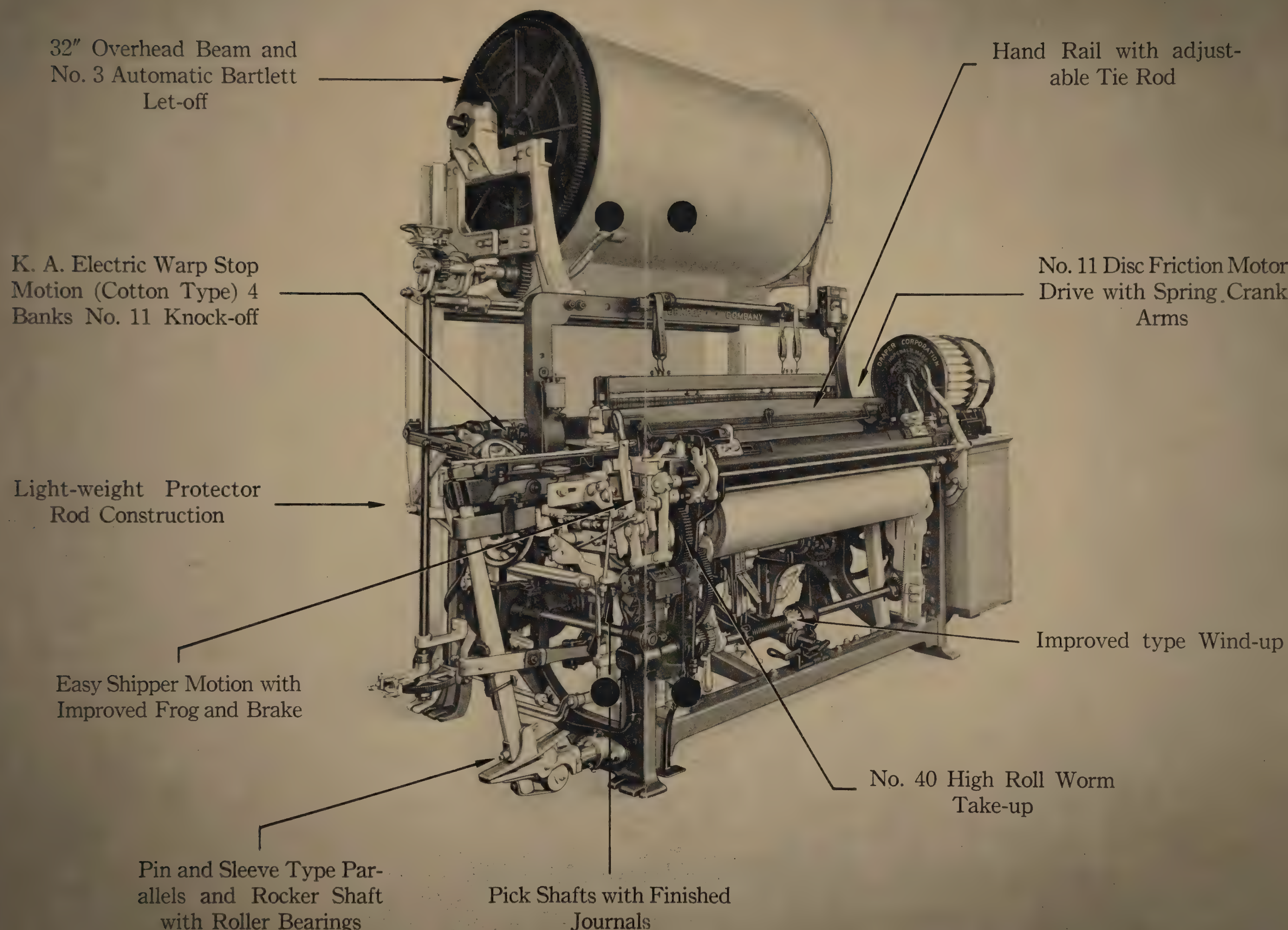
NUMBER 379 OCTOBER 1950

Rebuild Your "E" Model Looms With Improved Draper Parts

If you cannot get new looms in these days of increasing backlogs, and you must step-up your production, rebuild your "E" Model looms with the new Draper improved repair parts and mechanisms. See our new catalog for the improved repairs and watch for the flyers announcing the newest parts.

Your Draper representative will be able to tell you about the new mechanisms. The Draper booth at the Greenville Textile Show will have on display the rebuilt "E" Model loom that caused so much comment at the Atlantic City Textile Machinery Exhibition. See the cut inside for a few of the outstanding "E" Model developments.

Improved Mechanisms on a Rebuilt Draper E Model Loom



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DRAPER CORPORATION HOPEDALE MASS

NUMBER 384 SEPTEMBER 1952

Southern Textile Exposition

October 6–12, 1952

The well-known Southern Textile Exposition, held in Greenville, S. C., every two years, has been justly famous for being a top-flight show. The newest and best machinery, devices, and mill supplies have always been exhibited by a large number of textile machinery firms.

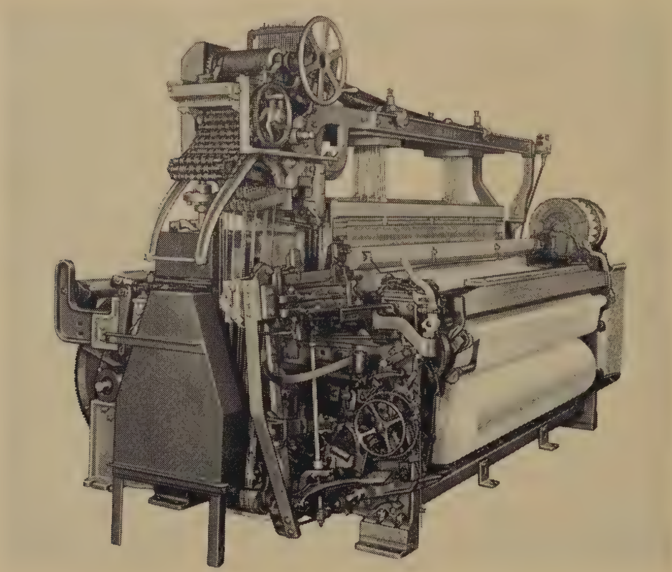
The same holds true this year. More than 250 textile machinery builders and mill suppliers will have their latest products on display in the enlarged and refurbished Textile Hall, scene of many of these fine Expositions. Each company will have members of their sales staff on hand to discuss the new equipment, some being shown for the first time.

The Sales Representatives from both the Atlanta and Spartanburg offices of Draper Corporation will be on hand to greet you. We feel that a visit to our booth — spaces 132 to 134 inclusive — will prove to be worth your while.

The New XD Loom

Draper Corporation has always stayed abreast of changing market conditions. New fabrics, new yarns, new blends mean new methods, new mechanisms, and even new looms. While the XD Model loom has been our most versatile, its usefulness has been still further broadened.

Improved design, the addition of new mechanisms, and the increase in warp and filling package capacity make it profitable to operate on a wide range of fabrics.



Featured new construction on this loom includes a —

2 x 1 box filling-mixing motion.
Positive acting W-2 head.
Set-mark reducing mechanism.
Streamlined, underslung temple, having rubber-mounted bearings which require no oil. (*Mill trial basis only*).
Yarn beams up to 32″ in diameter.
3″ throw crank shaft.
2 7/16″ diameter cam shaft.
72″ width reed space.

X-2 Model Loom for Quality Cottons

The X-2 Model loom was first seen at the Greenville Textile Show of 1941. It was built to produce better cloth at higher speeds and at less cost. Time and use in the mills have proven its ability to do these things.

Out latest X-2 Model has further improvements to aid in the weaving of quality cottons. While its center filling fork quickly stops the loom on the broken pick, it should be borne in mind that a bobbin change cannot be made from the fork. The new ratchet take-up permits the weaver to match the pick when there is a filling break so as to prevent thick and thin places in the cloth when the loom is again started.

The Exhibition X-2 loom is also equipped with an electric feeler and electric bobbin transferring mechanism. This new device eliminates several parts such as the filling cam, filling cam follower, etc. Fewer parts always mean less breakage and lower loom-fixing costs. This device can only be provided on a mill trial basis at present.

Rebuilt E Model

Because such a large number of our old E Model looms are still in operation we have always tried to adapt all of our new improvements for use on this workhorse of the weaving industry.

We are exhibiting this rebuilt E Model loom to show how older looms in the mills can be modernized and have the benefits of our latest improved mechanisms.

By applying these improved mechanisms and cost-saving devices, many mills, having older looms, can put themselves in a stronger competitive position.

Over the years, COTTON CHATS always, and rightly, has advised millowners to put their looms in shape during slack periods to prepare for the good times that always come.

Strengthened and braced loom frames, plus spring type crank arms, allow E Model looms to run at higher speeds.

The Exhibition loom incorporates a 26″ yarn beam in the conventional position, while overhead beams permit the use of even larger diameters, giving longer warps and less down time for looms. Clock spring tops are easy acting and reduce wear on other loom parts. Many other devices save time, labor, and money. Draper representatives at the show will be pleased to explain all of the features of this rebuilt loom.

Improved Mechanisms

Of particular interest are the No. 10 (for X and XK) and No. 11 (for E Models) Draper Motor drives. These are shipped as packaged units — one package per loom, as are some of our other improved mechanisms such as the Midget Feeler, Stafford Thread Cutter, No. 10 Selvage Motion, and Automatic Bartlett Let-off.

Improved Repair Parts

Draper repair parts have always been best for Draper looms; this is even more true of some of our newer, and more precise mechanisms. Adequate stocks of most-needed repair parts are kept on hand at Atlanta, Spartanburg, and Hopedale to insure fast delivery on orders.

Loom Accessories and Supplies

Draper wood parts being shown, such as picker sticks, bobbins, hand rails, jack sticks, binders, etc., are all made of selected woods from Draper-owned "tree farms." New Draper shuttles feature our patented Recessed Shuttle Spur which has 50% greater holding power. Our line of spindles and Mirror Finish spinning rings may be seen, as well as heddles and drop wires in standard finishes, from our Philadelphia, Pa., and Pawtucket, R. I., plants.

Stop in at our booth and give us the chance to show you all of these items.

COTTON CHATS

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DRAPER CORPORATION HOPEDALE MASS

NUMBER 385 MARCH 1953

Who Invented and Developed the Automatic Loom Bobbin?

Just to keep the record straight!

The original patent for the automatic loom bobbin was issued June 23, 1891, to James H. Northrop, Draper engineer and inventor, and was assigned to George Draper & Sons.

This patent called for applying two or more split rings to the butt of a weft-holding bobbin so that the bobbin might be received, held in and later discharged from holding jaws in the shuttle with the loom running at speed. This was the first step in the invention of the Draper automatic bobbin-changing loom.

After applying for this patent, Draper found that in July, 1887, Luther Chase Baldwin of Manchester, N. H., had taken out a patent for applying a single ring to the butt of a common loom bobbin to protect it from being damaged by rough handling.

Our pictures show the difference between these two patents. The Baldwin patent was taken out for a common loom bobbin.

It is often desirable, however, with a new patent pending, to possess a previous patent even if it is of doubtful application.

Enjoying the enviable reputation that no user of Draper patented machines had ever lost a cent by a claim of infringement of some earlier patent, Draper bought Baldwin's patent November 5, 1890.

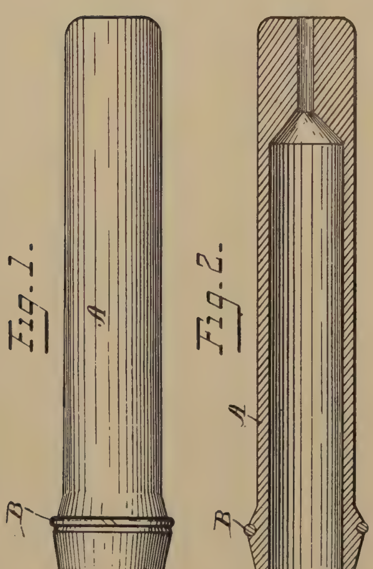
Two provisions of the assignment were:

Draper licensed Baldwin to manufacture automatic loom bobbins under Draper patents.

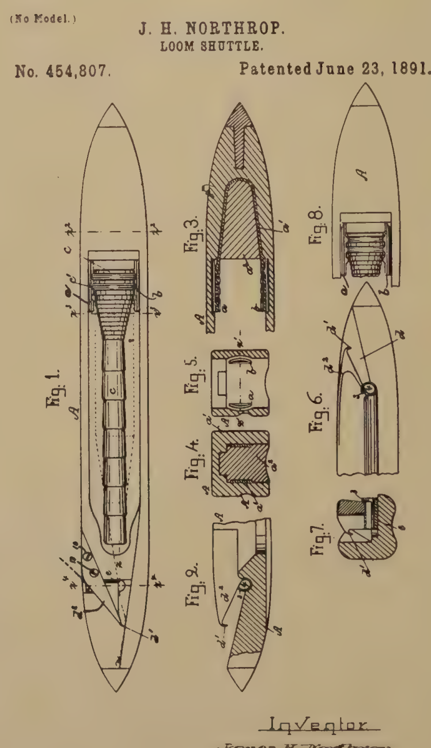
All bobbins, whether sold to Draper or the mills, were to conform to Draper standards.

Further, Draper agreed to buy bobbins from Baldwin.

From the Baldwin Patent Papers for Common Loom Bobbin with One Ring



From the Northrop Loom Papers for an Automatic Loom Bobbin and Shuttle



Unfortunately, it soon developed that the bobbins received were not wholly satisfactory.

Workmanship was defective and the bobbins caused unexpected troubles in the operation of the looms. We will not go into particulars. It is enough to say that the Drapers waited impatiently for the expiration of the contract to make a move towards getting a better bobbin.

So, not from choice but by compulsion, Draper had to undertake the manufacture of bobbins to get bobbins good enough to satisfy the needs of its customers.

Draper Improved Machines

Two full years were spent in planning and in the invention of a fully automatic machine to make bobbins with an accuracy never before known.

Automatic machines and new methods of processing enabled Draper craftsmen to produce bobbins without the serious faults of those they had been buying.

Draper engineers worked in intimate co-operation with the spinners and weavers in the mills and learned by observation and experience what improvements should be made to adapt the bobbin to the proper holding of the variety of filling yarns it was to carry and the better weaving off of those yarns. They studied how the bobbin might contribute to the efficient operation of the loom, insure the highest quality of fabrics produced, and help in the reduction of weaving costs.

If Baldwin or his successor made any improvements to the automatic loom bobbin during the period of their contract, the records do not support such a claim.

You Want the Right Bobbin

But history aside — and we regret that we had to go into details because of recent claims by a competitor — you are chiefly interested in getting bobbins that will run best in your looms.

You can get them from Draper whose engineers built your looms and know all about conditions to be met for any weave.

Why Draper Bobbins are Best

Draper has the most efficient bobbin-making plant. Draper bobbins will run best in your looms.

With many times as many acres of timber lands as any other bobbin maker, Draper can guarantee that every customer who orders rock maple bobbins will get 100 per cent rock maple—an exclusive Draper guarantee.

Large capacity kilns at Beebe River — larger than those of any other bobbin maker—insure proper seasoning of the blanks and deliver them with the correct moisture content, which is practically the same as the moisture content of the finished bobbins at time of shipment.

Wholly automatic turning and wood-working machines, accuracy in making of bushings, shields, rings and all other metal parts, superior finishing and enamelling departments, and a plating process for cadmium continue the process of perfection of manufacture and make certain that Draper bobbins are as near perfect as anything made from wood can be.

The Draper inspection system insures the quality of each individual bobbin.

Besides the regular inspection after each process, there is a final inspection of each bobbin by a team of three different operatives. This final inspection is for a minimum variation in size of rings, for straightness of barrel, for smoothness of finish and a visual inspection for possible flaws. Each bobbin is tested on the mill's own sample spindle running at speed. Every bobbin that fails to pass even one of these tests is discarded.

This is a 100 per cent test of every bobbin — and this 100 per cent test is exclusive with Draper.

By ordering your bobbins from Draper, you get the benefit of experience.

It may save you from costly experimenting with a good but unsuitable bobbin.

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A

DRAPER CORPORATION HOPEDALE MASS

NUMBER 386 MAY 1953

HOW HIGH ARE DRAPER PRICES?

Draper Corporation has an outstanding record of holding prices down during the period of inflation through which our country has been passing, and here is the story.

Most of us are familiar with the fact that the purchasing power of the consumer's dollar has been cut almost in half since 1939, but few realize that the value of the manufacturer's dollar has declined even more. In our own business labor and material costs have risen to an average figure which is, today, 114% higher than it was in 1939. The base price of the Draper X-2 model loom at the present time is only 78% higher than it was for a comparable loom in 1939. Included in the price of today's X-2 are top girt construction, certain cut tooth

gearing, and other improved mechanisms and parts which were not taken into consideration in the 1939 figure. In order to make a fair comparison the above-mentioned improvements should be deducted, making the adjusted price of the X-2 only 69% higher than the loom of 1939.

On repair parts we have done an even better job of holding prices down. Naturally the same rise in labor and raw material costs as applied to looms will also hold true with regard to repair parts. As against this same 114% increase, the average advancement of repair parts prices is only 60%! This 60% applies only to those items manufactured by us, for where we purchased items for resale, with little or no work to be done in our own shops, price increases have been reflected as incurred.

In giving our customers increased loom values for their dollars we are following the axiom of American business — production of more goods cheaper, initiated, incidentally, by the textile industry. From the very beginning it has been Draper policy that its looms must be low in cost to purchase, maintain, and to operate, and it is a source of satisfaction that our loom prices have not followed the inflated price curve but have remained well below it. There is a big question, however, as to just how far such a record can be extended in the face of facts covered in the memorandum following:

From: Purchasing Dept. Date: May 1, 1953
To: Cost Dept.

Subject: PRICE INCREASE — CARBON STEEL BARS

All of our suppliers of Hot Rolled and Cold Finished Carbon Steel Bars have raised their prices.

Cold Finished Bar prices have been increased by approximately 6%. This covers such items as steel for cam shafts, rocker shafts, and screw machine parts.

Hot Rolled Bar prices have been increased by approximately 6%. This covers steel for all forged parts as well as tie rods and connecting rods. Crank Shaft steels for X-2 and XD model looms increased about 8%.

Cold Finished Bars used in the manufacture of shuttle spurs increased by approximately 13% or about $23.00 per ton.

These increases are in addition to the approximate 5% increase on all steel items imposed after the steel strike in the summer of 1952.

C. F. F.

Some customers still seem to feel that machinery prices should be more closely geared to the fortunes and misfortunes of the textile industry. While the manufacturers of textile machinery want to be considered a part of the textile industry, problems in many cases are not entirely the same, and the above is a good example. With the shrinkage in earnings of rayon weavers and the reduction in many cotton lines, pressure has been increased for price concessions on machinery and parts. To reduce our prices now would be to endanger the efficiency of our organization, services to our customers, and possibly to curtail seriously our research and development program. This, in the long run, would work to the detriment of the textile industry in general, and specifically to the harm of the very customers who feel that price reductions should be made today.

Think where the major contributions to cheaper, better and more automatic weaving have come from over the past fifty-odd years. The battery, feeler, thread cutter, warp stop motion, filling motion, automatic let-off, and top motions were all Draper innovations, and every year our improvements in them are copied all over the world.

Take a look at the looms manufactured around the world. Nowhere do you find more than minor changes in appearance with no really original construction on

any generally accepted production model. "Retaining leadership through research" is no idle boast with us, and we mean to maintain it in the future just as we have in the past. Research and development programs must be maintained in a healthy condition, good times or bad.

The cost of research and development work is likewise tremendously increased over what it was in 1939. But there is no known way of estimating its present or potential value to either ourselves or our customers. We cannot measure the cost or the value of research — as we do with steel — by the ton.

In the period following the war our volume was excellent and we were able to pass along to our customers some of the savings of volume production in the form of holding prices down. Today the contrary is true. Volume is down, but wages and materials are not. Suppose that, when business was booming, we had not held our price lines but had permitted loom prices to reflect more than the increases of labor and raw materials instead of less? *Then*, perhaps, price reductions could now be considered. *And*, if we had followed this course, some of our customers might feel better off psychologically; but actually they would not be nearly as well off as they are with prices having been held at a very reasonable level all along.

Since any success of ours is passed along to the benefit of our customers, a continuously healthy economic condition must exist. We want to give our customers, in the future as we have in the past, increased loom value for their dollar. Juggling prices according to the value of the dollar and the state of the market is not a good preventive for economic ills, because in the long run costs must be taken into account.

From present indications, price reductions are impossible, and increases may be necessary.

COTTON CHATS

TRADE MARK REG U S PAT OFF AND IN CANADA
PRINTED IN U S A

DRAPER CORPORATION HOPEDALE MASS

NUMBER 389 MAY 1956

TRU-MOLD ESTABLISHES NEW SHUTTLE VALUES

Proven superiority of the new Draper Tru-Mold shuttle has led to its immediate acceptance by the textile industry.

Tru-Mold shuttles are manufactured under new and entirely different methods. These methods have made possible the first practical use of modern synthetic materials to attain, among other advantages, greatly increased shuttle life.

New fabricating processes were developed in co-operation with a leading molder of materials of this type. *We alone use them.*

Tru-Mold shuttles have now been operating in production quantities in the mills for over two years. They have proven their worth under varying weaving conditions.

In every instance, case histories prove shuttle life has been increased from 2½ to 4 times. For example:

a mill running 40″ looms at 172 P.P.M. had an average shuttle life (using dogwood shuttles) of 2800 hours. Tru-Mold shuttles ran in these same looms with an average life of over 7000 hours. Many shuttles had a life of 10,000 hours, *and one ran for 13,240 hours.*

Mills are now following up their trial-lot orders for these shuttles with monthly orders to accomplish a gradual but complete changeover.

We are stepping up our production facilities to meet growing industry demands.

A New Chapter in Shuttle History

When Draper developed the first automatic loom, a self-threading shuttle was needed to make our then-new filling changing battery practical. We designed and manufactured shuttles suitable for the purpose.

This put us, as early as 1891, into the business of manufacturing shuttles in addition to loom building.

Since then, when we introduced new loom models, we developed shuttles correct for use with them. We have also made thousands of custom-built variations of our basic shuttles to meet mill weave room needs.

Yet, in the intervening years, of the many dogwood shuttles manufactured by ourselves or others, *all have been similar in conception to the shuttle we made many years ago for use in our first looms.*

The Draper Tru-Mold shuttle marks *the first successful departure* from conventional shuttle manufacturing methods and use of traditional materials.

The Tru-Mold shuttle is the result of nearly a decade of study, testing, and trial by the Draper Research Department. Known as project No. 31-51, steady progress was made, with some delay during war years, until Research had a product we confidently could offer for sale to our customers.

Tru-Mold is a significant advance in shuttle engineering which may be credited to Draper Research.

Entirely new standards for assessing shuttle values have now been established.

Proven Advantages of Tru-Mold

Draper Tru-Mold shuttles are made of special phenolic laminated and macerated stocks. These materials have constant physical properties. Uniformity is further maintained through strict laboratory control.

Research Laboratory tests for bend, fracture point, torque, and tensile strength showed these materials, in each instance, superior to dogwood. Mill operation has confirmed these facts. The unvarying structure and strength of these new materials contributes to greatly extended shuttle life.

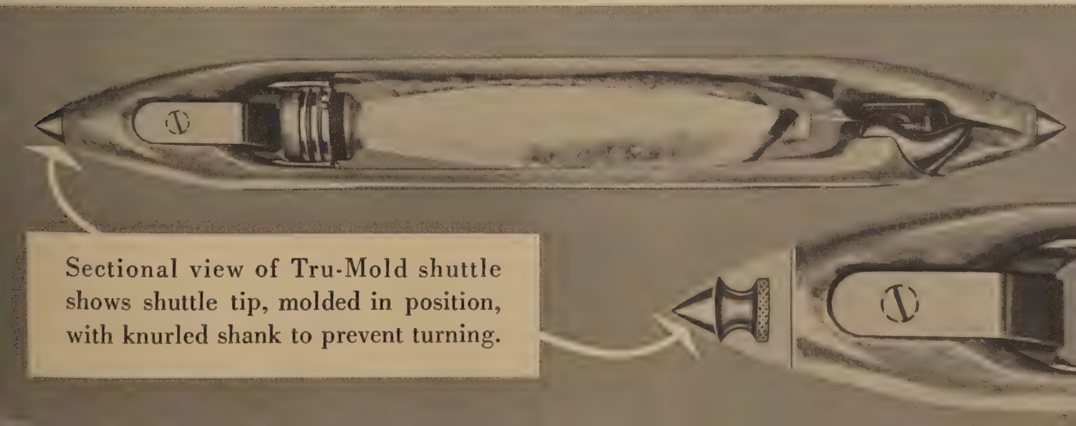
Draper Tru-Mold shuttles are the only shuttles molded to form, under controlled conditions.

Shuttle tips are molded in position. This, and new design features, prevents tips from twisting, loosening, or getting out of alignment.

These shuttles are of uniform weight. They are completely resistant to atmospheric changes in the weave room. Both of these features contribute to better shuttle boxing.

Dimensional stability of the materials permits assembling eyes and springs under greater pressure to utilize full strength of screws and nuts. When properly assembled with Draper fastenings, shuttle fittings will not loosen.

Draper Tru-Mold shuttles are slightly heavier than similar shuttles made of dogwood. For this reason, less power is required on the pick motion and component



Sectional view of Tru-Mold shuttle shows shuttle tip, molded in position, with knurled shank to prevent turning.

parts. Reduced power lessens wear and lowers loom maintenance costs.

Under favorable conditions, Tru-Mold shuttles are self-polishing, becoming smoother the longer they are run in the looms. Minor operational damage to Tru-Mold shuttles is easier to repair than it is with wood shuttles. Instructions for repairing are included with each shipment.

Tru-Mold shuttles can now be furnished in three sizes as follows: 15¾″ long x 1¾″ wide (7⅜″ bobbin) for XD synthetic fabrics; 15¾″ long x 1⅞″ wide (8″ bobbin) for cottons; and 16½″ long x 1-15/16″ wide (8¾″ bobbin) for cottons.

Although from four to six months are required to complete the precision-made molds for manufacture, two new sizes will become available in 1956: first, a shuttle 16½″ long x 2-1/16″ wide (8¾″ bobbin—large package) for cottons; and, second, a shuttle 15⅞″ long x 1-13/16″ wide (8″ bobbin) for rayon weaves.

Standardization to certain shuttle sizes does not prevent some variation being made to meet mill needs.

What the Mills Are Saying

We have told, herein, our story of the Tru-Mold shuttle. Here, also, are a few reports from customers which are typical of many we are now receiving.

Mill A: ". . . less loom maintenance with improved boxing . . . all loomfixers are very anxious to get these shuttles for their particular section."

Mill B: ". . . more than pleased with Tru-Mold shuttle. Only five have failed (in 18 months) and these were removed because of smashes. . ."

Mill C: "Six of these shuttles have been running for the past year (120 hours a week) and they show only a little wear . . . will order on a monthly basis. . ."